PIONEER
The Art of Entertainment

Service Manual

ORDER NO.
ARP2734

STEREO RECEIVER
SX-312R KU, KC, SD

● Refer to the service manual ARP2479 for SX−311R/KUC and SD.

SX−312R HAS THE FOLLOWING :

Type	Power Requirement	Remarks
KU	AC120V only	
KC	AC120V only	
SD	AC110V, 120−127V, 220V, 240V (Switchable)	

● This manual is applicable to SX−312R/KU, KC and SD.

CONTRAST OF MISCELLANEOUS PARTS

NOTES :
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

SX−312R/KU, KC, SD and SX−311R/KUC have the same construction except for the following :

Mark	Symbol & Description	Part No.				Remarks
		SX−311R/KUC	SX−312R/KU	SX−312R/KC	SX−312R/SD	
◉	COMPLEX assembly	AWZ4023	AWZ4023	AWZ4023	AWZ4028	*1
◉	CONTROL assembly	AWZ4019	AWZ4019	AWZ4019	AWZ4082	*1
NSP	VR assembly	AWZ4024	AWZ4021	AWZ4021	AWZ4021	
NSP	9k /10k assembly	....	....	....	AWZ4027	*1 (Channel step selector)
⚠	S1 Voltage selector (AC110V/120−127V/220V/240V)	....	....	....	AKX−507	
⚠	S2 Voltage selector (AC110−127V/220−240V)	....	....	....	AKX1004	

*Note *1 : Refer to "Contrast of all PCB assemblies".*

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Mark	Symbol & Description	Part No.				Remarks
		SX−311R/KUC	SX−312R/KU	SX−312R/KC	SX−312R/SD	
⚠	T1 Power transformer (AC120V)	ATS1409	ATS1409	ATS1409	………………	
⚠	T1 Power transformer (AC110V/120−127V/220V/240V)	………………	………………	………………	ATS1411	
⚠	FU1 Fuse (4A/125V)	AEK−125	AEK−125	AEK−125	………………	
⚠	FU1, FU2 Fuse (2A/125V)	………………	………………	………………	AEK−122	
⚠	Fuse holder (For fuse FU2)	………………	………………	………………	AKR1001	
⚠	AC power cord	ADG1058	ADG1058	ADG1058	ADG1051	
⚠	Strain relief	AEP−113	AEP−113	AEP−113	AEC−882	
	Rotary knob assy	AAB1275	………………	………………	………………	(VOLUME)
	Rotary knob L	………………	AAB1277	AAB1277	AAB1277	
	Button (SPEAKER)	AAD2211	AAD2453	AAD2453	AAD2453	
	Button A (PLS) (STATION CALL)	AAD2212	AAD2441	AAD2441	AAD2441	
	Sub panel	AAP1232	AAP1379	AAP1379	AAP1379	
	Front panel	AMB1950	AMB2144	AMB2144	AMB2145	
	Screw (STEEL)	ABA1009	………………	………………	ABA1009	
	Insulator assy	AMR2140	………………	………………	AMR2140	
	Leg assy	………………	AEC−784	AEC−784	………………	(For rear side)
	Rear panel	ANC1842	ANC1842	ANC1842	ANC2091	
	Screw (For fuse holder)	………………	………………	………………	BBZ26P120FMC	
	Screw (For channel step selector)	………………	………………	………………	PMZ30P040FMC	
	Insulation spacer	………………	………………	………………	AEC1403	
NSP	Badge (PIONEER)	PAM1407	………………	………………	………………	
	Badge (PIONEER)	………………	PAM1608	PAM1608	PAM1608	
	Packing case	AHD2225	AHD2566	AHD2566	AHD2576	Packing
	Operating instructions (English)	ARB1357	ARB1439	ARB1439	ARB1439	
	Operating instructions (Spanish)	………………	………………	………………	ARC1434	
	Operating instructions (French)	………………	………………	ARC1433	………………	

Note : Contrast of all PCB assemblies.

Mark	Symbol & Description	Part No.					Remarks
		SX−311R		SX−312R			
		KUC type	SD type	KU type	KC type	SD type	
◉	CONTROL assembly	AWZ4019	AWZ4082	AWZ4019	AWZ4019	AWZ4082	∗2
NSP	SP SWITCH assembly	AWZ4020	AWZ4020	AWZ4020	AWZ4020	AWZ4020	
◉	COMPLEX assembly	AWZ4023	AWZ4028	AWZ4023	AWZ4023	AWZ4028	∗3
NSP	VR assembly	AWZ4024	AWZ4024	AWZ4021	AWZ4021	AWZ4021	
NSP	9k /10k assembly	……………	AWZ4027	……………	……………	AWZ4027	∗4

- *All the models have the same TRANS assembly.*

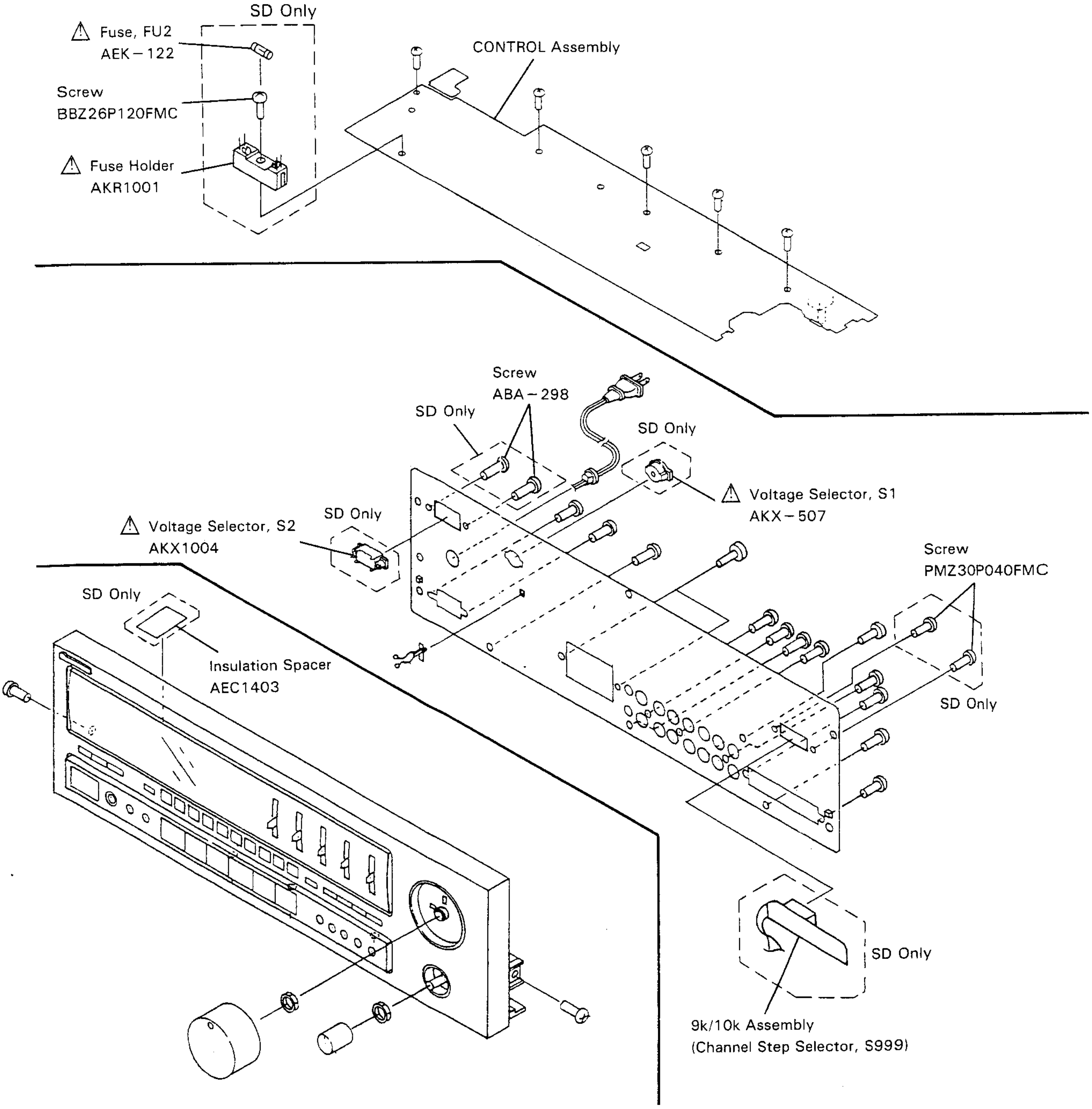
∗2 : COTROL assemblies of SX−312R/SD and SX−311R/SD types are the same.
∗3 : COMPLEX assemblies of SX−312R/SD and SX−311R/SD types are the same.
∗4 : 9k /10k assemblies of SX−312R/SD and SX−311R/SD types are the same.

VR ASSEMBLY

AWZ4021 and AWZ4024 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4024	AWZ4021	
	Q361	RN1201	....	
	C364	CKCYX104M25	....	
	VR361	ACX1070	ACX1069	
	R363	RD1/8PM182J	....	

EXPLODED VIEWS


SD Only
⚠ Fuse, FU2
AEK－122
Screw
BBZ26P120FMC
⚠ Fuse Holder
AKR1001
CONTROL Assembly
Screw
ABA－298
SD Only
SD Only
⚠ Voltage Selector, S1
AKX－507
SD Only
⚠ Voltage Selector, S2
AKX1004
Screw
PMZ30P040FMC
SD Only
Insulation Spacer
AEC1403
SD Only
SD Only
9k/10k Assembly
(Channel Step Selector, S999)

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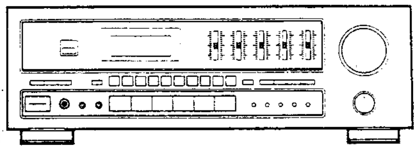
Service Manual



ORDER NO.
ARP2479

STEREO RECEIVER

SX-311R
SX-301
SX-251R
SX-201

SX-311R, SX-301, SX-251R AND SX-201 HAVE THE FOLLOWING :

Type	Model				Power Requirement	Remarks
	SX-311R	SX-301	SX-251R	SX-201		
KUC	○	○	○	○	AC120V only	
SD	○	—	—	○	AC110V, 120V-127V, 220V, 240V (switchable)	
KUC/CA	○	—	○	○	AC120V only	

- This manual is applicable to the following : SX-311R/KUC, SD and KUC/CA ; SX-301/KUC ; SX-251R/KUC and KUC/CA ; SX-201/KUC, SD and KUC/CA.
- For the following : SX-311R/SD and KUC/CA ; SX-301/KUC ; SX-251R/KUC and KUC/CA ; SX-201/KUC, SD and KUC/CA, refer to pages 33-41.
- KUC/CA type is identical to KUC type with French operating instruction. For all information except for the instruction, refer to KUC type.

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This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SAFETY INFORMATION

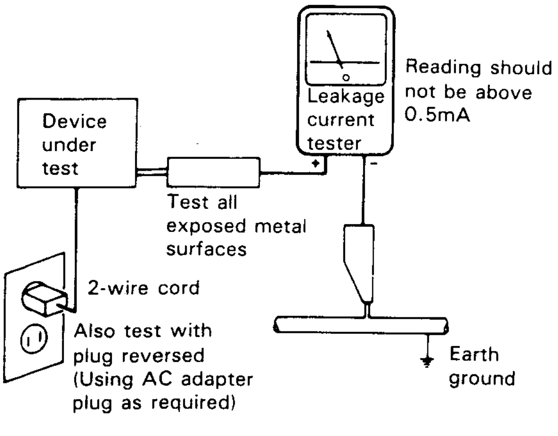
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Leakage current tester
Reading should not be above 0.5mA
Device under test
+
-
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. SPECIFICATIONS

<SX-311R, SX-301>

Amplifier Section

Continuous Average Power Output is 70 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more then 0.8% total harmonic distortion.**

Continuous Power Output (both channel driven)**	
20 Hz / 20 kHz, T.H.D. 0.8%, 8 Ω	70 W + 70 W
Dynamic power output (with EIA test signal)	
2/4/8 Ω	145 W/130 W/90 W
Input (Sensitivity/Impedance)	
PHONO	2.5 mV/47 kΩ
CD, VCR/LD, TAPE 1/DAT, TAPE 2	150 mV/22 kΩ
Phono Overload Level (T.H.D. 0.01%, 1 kHz)	
PHONO	130 mV
Output Level	
TAPE REC	150 mV/2.2 kΩ
Frequency Response	
PHONO (RIAA Equalization)	20 Hz to 20,000 Hz ±0.5 dB
CD, VCR/LD, TAPE 1/DAT, TAPE 2	10 Hz to 70,000 Hz $^{+0.5}_{-3.0}$ dB
Signal-to-Noise Ratio (IHF, short circuited, A network)	
PHONO	72 dB
CD, VCR/LD, TAPE 1/DAT, TAPE 2	96 dB
Graphic Equalizer frequency band	100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ±8 dB

FM Tuner Section

Frequency range	87.5 MHz to 108 MHz
Usable Sensitivity	12.3 dBf, IHF (1.1 µV/75 Ω)
50 dB Quieting Sensitivity	
MONO	16.8 dBf (1.6 µV/75 Ω)
STEREO	38.6 dBf (19.5 µV/75 Ω)
Signal-to-Noise Ratio	
MONO	73 dB (at 85 dBf)
STEREO	70 dB (at 85 dBf)
Distortion	
STEREO	0.3% (1 kHz)
Alternate Channel Selectivity	50 dB (400 kHz)
Stereo Separation	35 dB (1 kHz)
Frequency Response	30 Hz to 15 kHz (±1 dB)
Antenna Input	300 Ω balanced, 75 Ω unbalanced

AM Tuner Section

Frequency range	
When 10 kHz step	530 kHz to 1,700 kHz
(SX-311R only) When 9 kHz step	531 kHz to 1,602 kHz
Sensitivity	
IHF, Loop antenna	350 µV/m
Selectivity	20 dB
Signal-to-Noise Ratio	50 dB
Antenna	AM Loop Antenna

Miscellaneous

Power Requirements	
U.S., Canadian models	AC 120 Volts, 60 Hz
(SX-311R only) Multi-voltage model	~AC 110 V/120 V – 127 V /220 V/240 V (switchable), 50/60 Hz
Power Consumption	
U.S., Canadian models	250 W (UL), 335 VA (CSA)
(SX-311R only) Multi-voltage model	410 W
AC Outlet	SWITCHED x 1 : 100W MAX
Dimensions	
SX-311R	420 (W) X 140 (H) X 289 (D) mm 16-9/16(W) X 5-1/2 (H) X 11-3/8(D) in
SX-301	420 (W) X 135 (H) X 289 (D) mm 16-9/16(W) X 5-5/16 (H) X 11-3/8(D) in
Weight (without package)	5.8 kg (12 lb 13 oz)

Furnished Parts

FM Antenna	1
AM Loop Antenna	1
Operating Instructions	1
(SX-311R only) Remote control unit	1
Dry cell battery (size "AAA" (R03/UM-4))	2

* *Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.*
** *Measured By Audio Spectrum Analyzer.*

NOTE:
Specifications and design subject to possible modification without notice due to improvements.

<SX-251R, SX-201>

Amplifier Section

Continuous Average Power Output is 50 watts* per channel, min., at 8 ohms from 40 Hertz to 20,000 Hertz with no more then 0.8% total harmonic distortion.**

Continuous Power Output (both channel driven)**	
40 Hz / 20 kHz, T.H.D. 0.8%, 8 Ω	50 W + 50 W
Dynamic power output (with EIA test signal)	
4/8 Ω	85 W/65 W
Input (Sensitivity/Impedance)	
PHONO	2.5 mV/47 kΩ
CD, VCR/LD, TAPE 1/DAT, TAPE 2	150 mV/22 kΩ
Phono Overload Level (T.H.D. 0.01%, 1 kHz)	
PHONO	130 mV
Output Level	
TAPE REC	150 mV/2.2 kΩ
Frequency Response	
PHONO (RIAA Equalization)	20 Hz to 20,000 Hz ±0.5 dB
CD, VCR/LD, TAPE 1/DAT, TAPE 2	10 Hz to 70,000 Hz $^{+0.5}_{-3.0}$ dB
Signal-to-Noise Ratio (IHF, short circuited, A network)	
PHONO	72 dB
CD, VCR/LD, TAPE 1/DAT, TAPE 2	96 dB
Graphic Equalizer frequency band	100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ±8 dB

FM Tuner Section

Frequency range	87.5 MHz to 108 MHz
Usable Sensitivity	12.3 dBf, IHF (1.1 µV/75 Ω)
50 dB Quieting Sensitivity	
MONO	16.8 dBf (1.6 µV/75 Ω)
STEREO	38.6 dBf (19.5 µV/75 Ω)
Signal-to-Noise Ratio	
MONO	73 dB (at 85 dBf)
STEREO	70 dB (at 85 dBf)
Distortion	
STEREO	0.3% (1 kHz)
Alternate Channel Selectivity	50 dB (400 kHz)
Stereo Separation	35 dB (1 kHz)
Frequency Response	30 Hz to 15 kHz (±1 dB)
Antenna Input	300 Ω balanced, 75 Ω unbalanced

AM Tuner Section

Frequency range	
When 10 kHz step	530 kHz to 1,700 kHz
(SX-201 only) When 9 kHz step	531 kHz to 1,602 kHz
Sensitivity	
IHF, Loop antenna	350 µV/m
Selectivity	20 dB
Signal-to-Noise Ratio	50 dB
Antenna	AM Loop Antenna

Miscellaneous

Power Requirements	
U.S., Canadian models	AC 120 Volts, 60 Hz
(SX-201 only) Multi-voltage model	~AC 110 V/120 V – 127 V /220 V/240 V (switchable), 50/60 Hz
Power Consumption	
U.S., Canadian models	190 W (UL), 240 VA (CSA)
(SX-201 only) Multi-voltage model	290 W
AC Outlet	SWITCHED x 1 : 100W MAX
Dimensions	420 (W) X 135 (H) X 289 (D) mm 16-9/16(W) X 5-5/16 (H) X 11-3/8(D) in
Weight (without package)	5.3 kg (11 lb 11 oz)

Furnished Parts

FM Antenna	1
AM Loop Antenna	1
Operating Instructions	1
(SX-251R only) Remote control unit	1
Dry cell battery (size "AAA" (R03/UM-4))	2

* *Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.*
** *Measured By Audio Spectrum Analyzer.*

NOTE:
Specifications and design subject to possible modification without notice due to improvements.

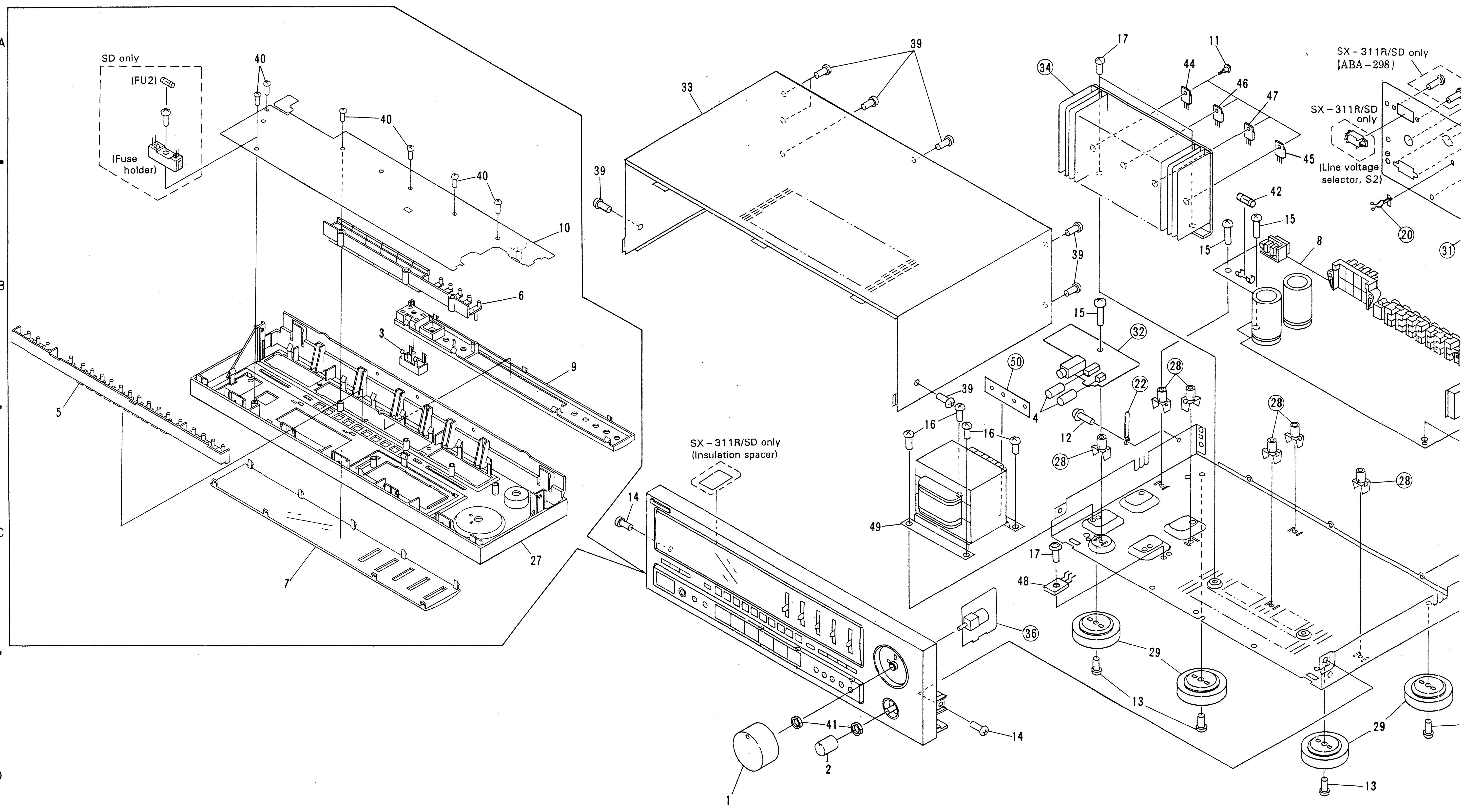
3. EXPLODED VIEWS, PACKING AND PARTS LIST

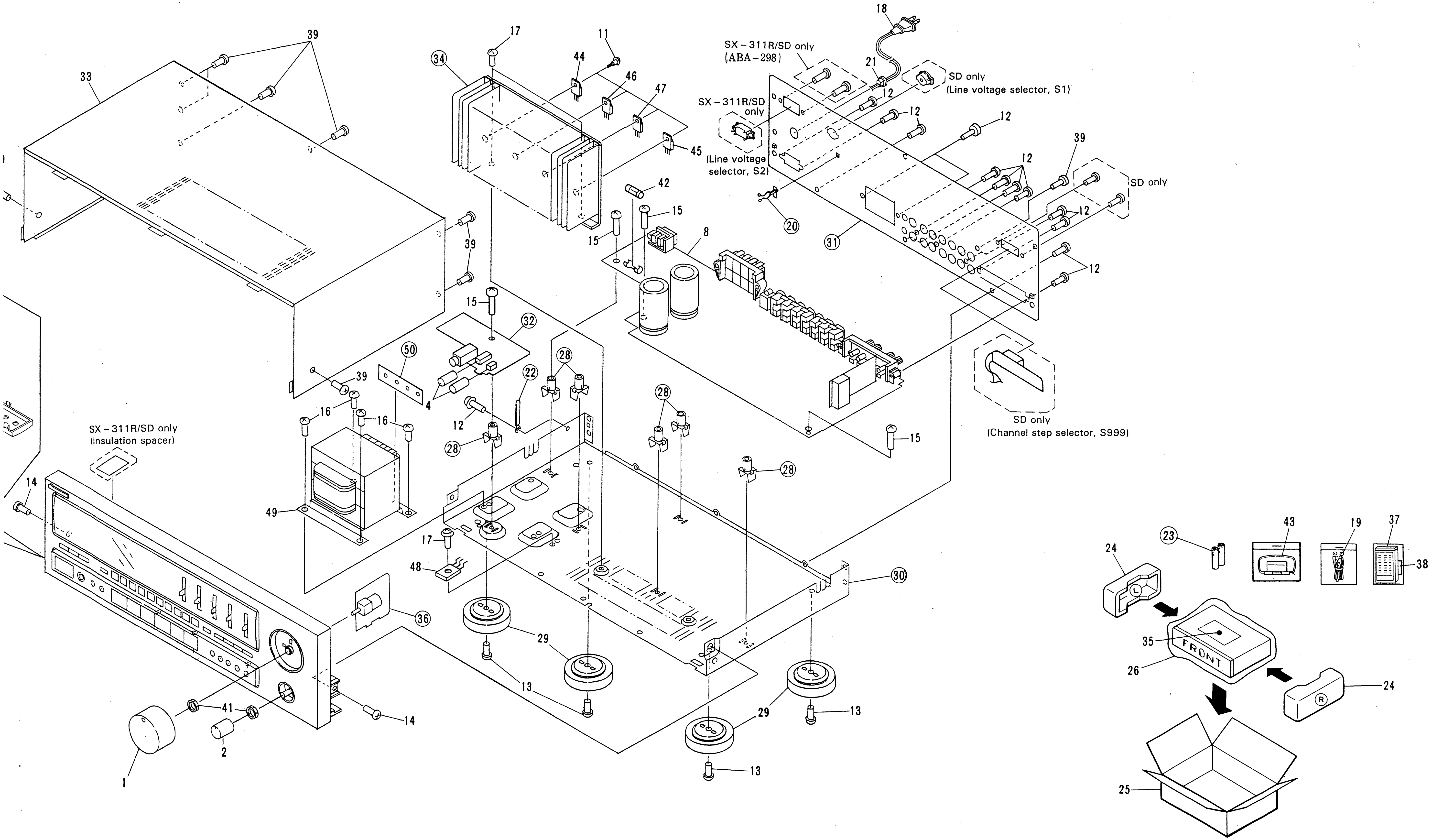
NOTES:

- *The parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Parts list of Exterior and Packing

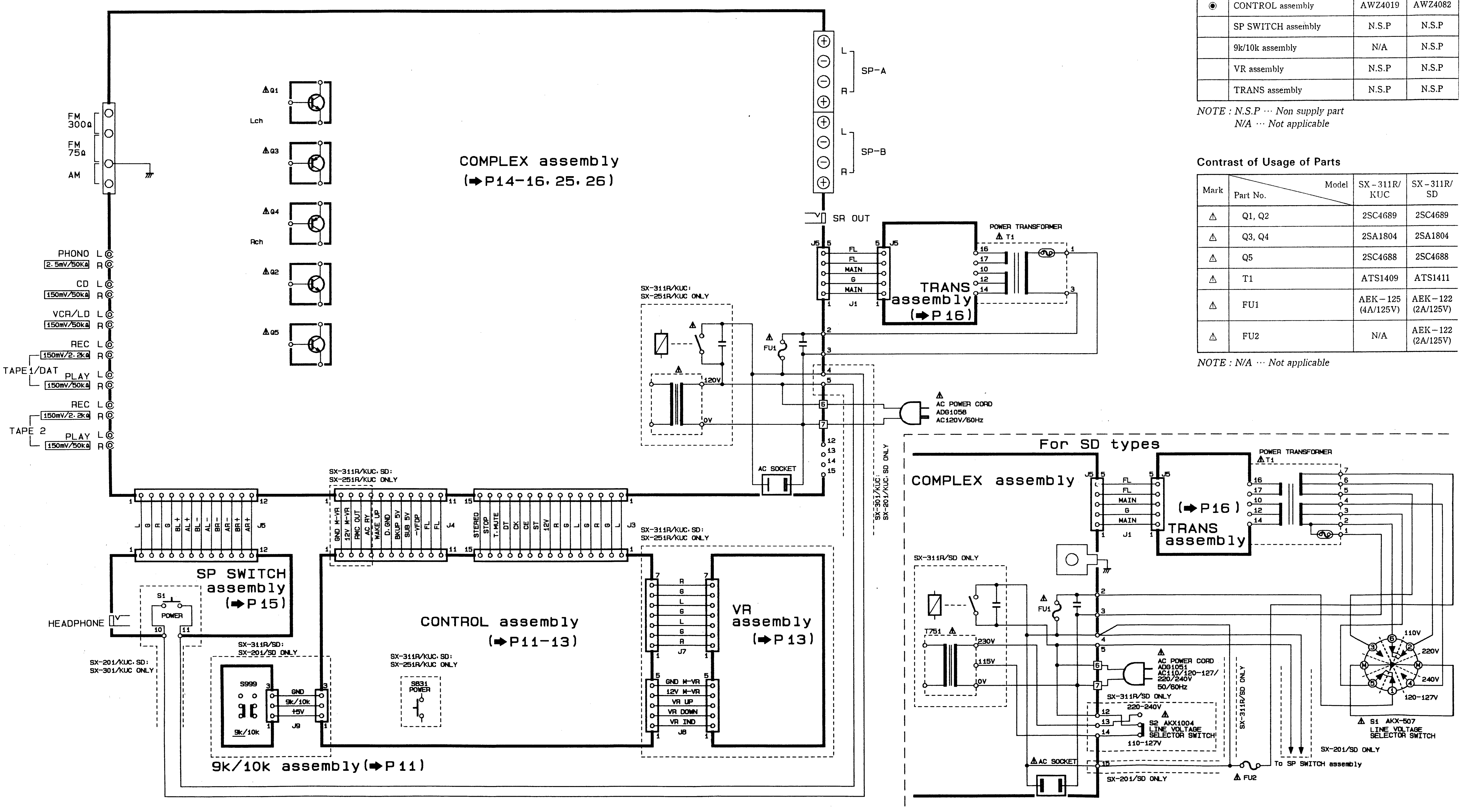
Mark	No.	Description	Parts No.
	1	ROTARY KNOB ASSY (VOLUME)	AAB1275
	2	ROTARY KNOB S (BALANCE)	AAB1276
	3	POWER KNOB	AAD1984
	4	BUTTON (SPEAKER)	AAD2211
	5	BUTTON A (PLS)	AAD2212
	6	BUTTON B (PLS)	AAD2213
	7	DISPLAY PANEL (PLS)	AAK2277
◉	8	COMPLEX ASSEMBLY	AWZ4023
	9	SUB PANEL	AAP1232
◉	10	CONTROL ASSEMBLY	AWZ4019
	11	SCREW (STEEL)	ABA-297
	12	SCREW	ABA-298
	13	SCREW (STEEL)	ABA1009
	14	SCREW (STEEL)	ABA1011
	15	SCREW	ABA1018
	16	SCREW	ABA1027
	17	SCREW	ABA1054
⚠	18	AC POWER CORD	ADG1058
	19	FM ANTENNA	ADH1008
	20	PURSE LOCK	AEC1325
⚠	21	CORD STOPPER	AEP-113
	22	BINDER	AEP-215
	23	BATTERY (R03, AAA)	AEX-021
	24	SIDE PAD (PS)	AHA1482
	25	PACKING CASE	AHD2225
	26	PACKING SHEET	AHG1016
	27	FRONT PANEL (PLS)	AMB1950
	28	PCB MOULD	AMR1525
	29	INSULATOR ASSY	AMR2140
	30	CHASSIS	ANA1163
	31	REAR PANEL (MTL)	ANC1842
	32	SP SWITCH ASSEMBLY	AWZ4020
	33	BONNET CASE	ANE1334
	34	HEAT SINK	ANH1364
	35	OPERATING INSTRUCTIONS (ENGLISH)	ARB1357
	36	VR ASSEMBLY	AWZ4024
	37	REMOTE CONTROL UNIT (CU-SX042)	AXD1259
	38	BATTERY COVER	AZA1297
	39	SCREW	BCZ30P080FZK
	40	SCREW	BPZ26P080FMC
	41	NUT	NK90FUC
⚠	42	FUSE (4A/125V, FU1)	AEK-125
	43	LOOP ANTENNA (L)	ATB1005
⚠	44	POWER TRANSISTOR (Q1)	2SC4689
⚠	45	POWER TRANSISTOR (Q2)	2SC4689
⚠	46	POWER TRANSISTOR (Q3)	2SA1804
⚠	47	POWER TRANSISTOR (Q4)	2SA1804
⚠	48	POWER TRANSISTOR (Q5)	2SC4688
⚠	49	POWER TRANSFORMER (T1)	ATS1409
	50	TRANS ASSEMBLY	AWZ4016


SD only
(FU2)
(Fuse holder)
SX-311R/SD only
(ABA-298)
SX-311R/SD only
(Line voltage selector, S2)
SX-311R/SD only
(Insulation spacer)


SX-311R/SD only
(ABA-298)
SD only
(Line voltage selector, S1)
SX-311R/SD only
(Line voltage selector, S2)
SD only
SD only
(Channel step selector, S999)
SX-311R/SD only
(Insulation spacer)
FRONT

4. SCHEMATIC DIAGRAMS AND PCB CONNECTION DIAGRAM

4.1 OVERALL SCHEMATIC DIAGRAM


COMPLEX assembly
(➡P14–16, 25, 26)
FM 300Ω
FM 75Ω
AM
PHONO L R 2.5mV/50kΩ
CD L R 150mV/50kΩ
VCR/LD L R 150mV/50kΩ
TAPE1/DAT
REC L R 150mV/2.2kΩ
PLAY L R 150mV/50kΩ
TAPE 2
REC L R 150mV/2.2kΩ
PLAY L R 150mV/50kΩ
Lch
Rch
⚠Q1
⚠Q3
⚠Q4
⚠Q2
⚠Q5
SP–A
SP–B
L
R
SR OUT
J5
J1
FL
FL
MAIN
G
MAIN
TRANS assembly
(➡P 16)
POWER TRANSFORMER
⚠T1
16
17
10
12
14
SX-311R/KUC:
SX-251R/KUC ONLY
⚠
120V
0V
⚠FU1
AC SOCKET
⚠
AC POWER CORD
ADG1058
AC120V/60Hz
SX-301/KUC:
SX-201/KUC, SD ONLY
SX-311R/KUC, SD:
SX-251R/KUC ONLY
L G R G BL+ AL+ BL– AL– BR– AR– BR+ AR+ J5
GND M-VR 12V M-VR RMC OUT AC RY WAKE UP D.GND BKUP 5V SUB 5V –VFDP FL FL J4
STEREO STOP T.MUTE DT CK CE ST 12V R G L G R G L J3
SP SWITCH assembly
(➡P 15)
S1
POWER
HEADPHONE
SX-201/KUC, SD:
SX-301/KUC ONLY
SX-311R/SD:
SX-201/SD ONLY
S999
9k/10k
GND
9k/10k
+5V
J9
9k/10k assembly(➡P 11)
CONTROL assembly
(➡P11–13)
SX-311R/KUC, SD:
SX-251R/KUC ONLY
S831
POWER
R G L G L G R
J7
GND M-VR
12V M-VR
VR UP
VR DOWN
VR IND
J8
VR assembly
(➡P 13)
For SD types
COMPLEX assembly
(➡P16)
TRANS assembly
POWER TRANSFORMER
⚠T1
SX-311R/SD ONLY
T751 ⚠
230V
115V
0V
⚠
FU1
⚠
AC POWER CORD
ADG1051
AC110/120–127/
220/240V
50/60Hz
SX-311R/SD ONLY
220–240V
⚠
S2 AKX1004
LINE VOLTAGE
SELECTOR SWITCH
110–127V
SX-311R/SD ONLY
⚠AC SOCKET
SX-201/SD ONLY
⚠FU2
To SP SWITCH assembly
SX-201/SD ONLY
110V
220V
240V
120–127V
⚠ S1 AKX-507
LINE VOLTAGE
SELECTOR SWITCH

Contrast of Usage of Assemblies

Mark	Model / Assembly Name	SX-311R/KUC	SX-311R/SD
◉	COMPLEX assembly	AWZ4023	AWZ4028
◉	CONTROL assembly	AWZ4019	AWZ4082
	SP SWITCH assembly	N.S.P	N.S.P
	9k/10k assembly	N/A	N.S.P
	VR assembly	N.S.P	N.S.P
	TRANS assembly	N.S.P	N.S.P

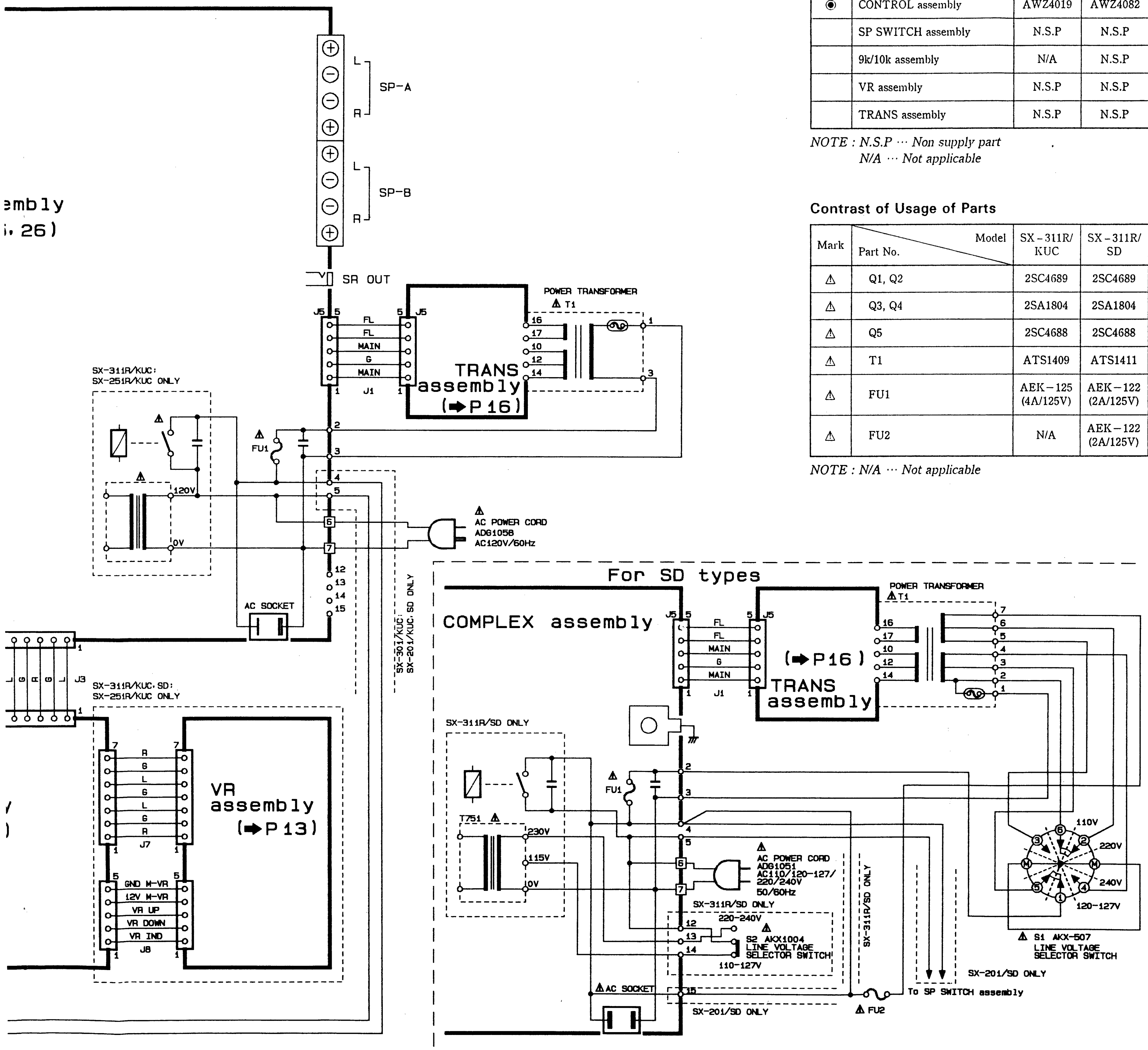
NOTE : N.S.P ··· Non supply part
N/A ··· Not applicable

Contrast of Usage of Parts

Mark	Model / Part No.	SX-311R/KUC	SX-311R/SD
⚠	Q1, Q2	2SC4689	2SC4689
⚠	Q3, Q4	2SA1804	2SA1804
⚠	Q5	2SC4688	2SC4688
⚠	T1	ATS1409	ATS1411
⚠	FU1	AEK–125 (4A/125V)	AEK–122 (2A/125V)
⚠	FU2	N/A	AEK–122 (2A/125V)

NOTE : N/A ··· Not applicable

M


embly
, 26)
SP-A
SP-B
L
R
SR OUT
J5
FL
MAIN
G
J1
TRANS
assembly
(➡P 16)
POWER TRANSFORMER
⚠ T1
SX-311R/KUC:
SX-251R/KUC ONLY
120V
0V
⚠ FU1
⚠ AC POWER CORD
ADG1058
AC120V/60Hz
AC SOCKET
SX-301/KUC:
SX-201/KUC, SD ONLY
J3
SX-311R/KUC, SD:
SX-251R/KUC ONLY
J7
VR
assembly
(➡P 13)
GND M-VR
12V M-VR
VR UP
VR DOWN
VR IND
J8
For SD types
COMPLEX assembly
SX-311R/SD ONLY
T751 ⚠
230V
115V
⚠ AC POWER CORD
ADG1051
AC110/120-127/
220/240V
50/60Hz
220-240V
⚠ S2 AKX1004
LINE VOLTAGE
SELECTOR SWITCH
110-127V
⚠ AC SOCKET
SX-201/SD ONLY
⚠ FU2
To SP SWITCH assembly
110V
220V
240V
120-127V
⚠ S1 AKX-507
LINE VOLTAGE
SELECTOR SWITCH

Contrast of Usage of Assemblies

Mark	Model / Assembly Name	SX-311R/ KUC	SX-311R/ SD	SX-301/ KUC	SX-251R/ KUC	SX-201/ KUC	SX-201/ SD
◉	COMPLEX assembly	AWZ4023	AWZ4028	AWZ4022	AWZ4018	AWZ4014	AWZ4025
◉	CONTROL assembly	AWZ4019	AWZ4082	AWZ4015	AWZ4019	AWZ4015	AWZ4026
	SP SWITCH assembly	N.S.P	N.S.P	N.S.P	N.S.P	N.S.P	N.S.P
	9k/10k assembly	N/A	N.S.P	N/A	N/A	N/A	N.S.P
	VR assembly	N.S.P	N.S.P	N/A	N.S.P	N/A	N/A
	TRANS assembly	N.S.P	N.S.P	N.S.P	N.S.P	N.S.P	N.S.P

NOTE : N.S.P ··· Non supply part
N/A ··· Not applicable

Contrast of Usage of Parts

Mark	Model / Part No.	SX-311R/ KUC	SX-311R/ SD	SX-301/ KUC	SX-251R/ KUC	SX-201/ KUC	SX-201/ SD
⚠	Q1, Q2	2SC4689	2SC4689	2SC4689	2SC4688	2SC4688	2SC4688
⚠	Q3, Q4	2SA1804	2SA1804	2SA1804	2SA1803	2SA1803	2SA1803
⚠	Q5	2SC4688	2SC4688	2SC4688	2SC4688	2SC4688	2SC4688
⚠	T1	ATS1409	ATS1411	ATS1409	ATS1408	ATS1408	ATS1410
⚠	FU1	AEK-125 (4A/125V)	AEK-122 (2A/125V)	AEK-125 (4A/125V)	AEK-124 (3.15A/125V)	AEK-124 (3.15A/125V)	AEK-121 (1.6A/125V)
⚠	FU2	N/A	AEK-122 (2A/125V)	N/A	N/A	N/A	AEK-121 (1.6A/125V)

NOTE : N/A ··· Not applicable

1. RESISTORS:
Indicated in Ω, ¼W, ⅛W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% (M); ±20% tolerance

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
☐ : Signal voltage at (W +   W   8Ω)output (1kHz)
☐ : DC voltage (V) at no input signal
Value in (   ) is DC voltage at rated power.
⇦ mA : DC current at no input signal
mV : Signal voltage at FM 1kHz ±75kHz DEV.

4. OTHERS:
➡ : Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.
▼ (RED) : Measurement point
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. SWITCHES (The underline indicates the switch position)

S1	VOLTAGE SELECTOR 110/120-127/220/240V (SX-311R/SD; SX-201/SD ONLY)
S2	VOLTAGE SELECTOR 110-127V/220-240V (SX-311R/SD ONLY)

SP SWITCH assembly

S570	SP A/B
S1	POWER (SX-301/KUC; SX-201/KUC, SD ONLY)

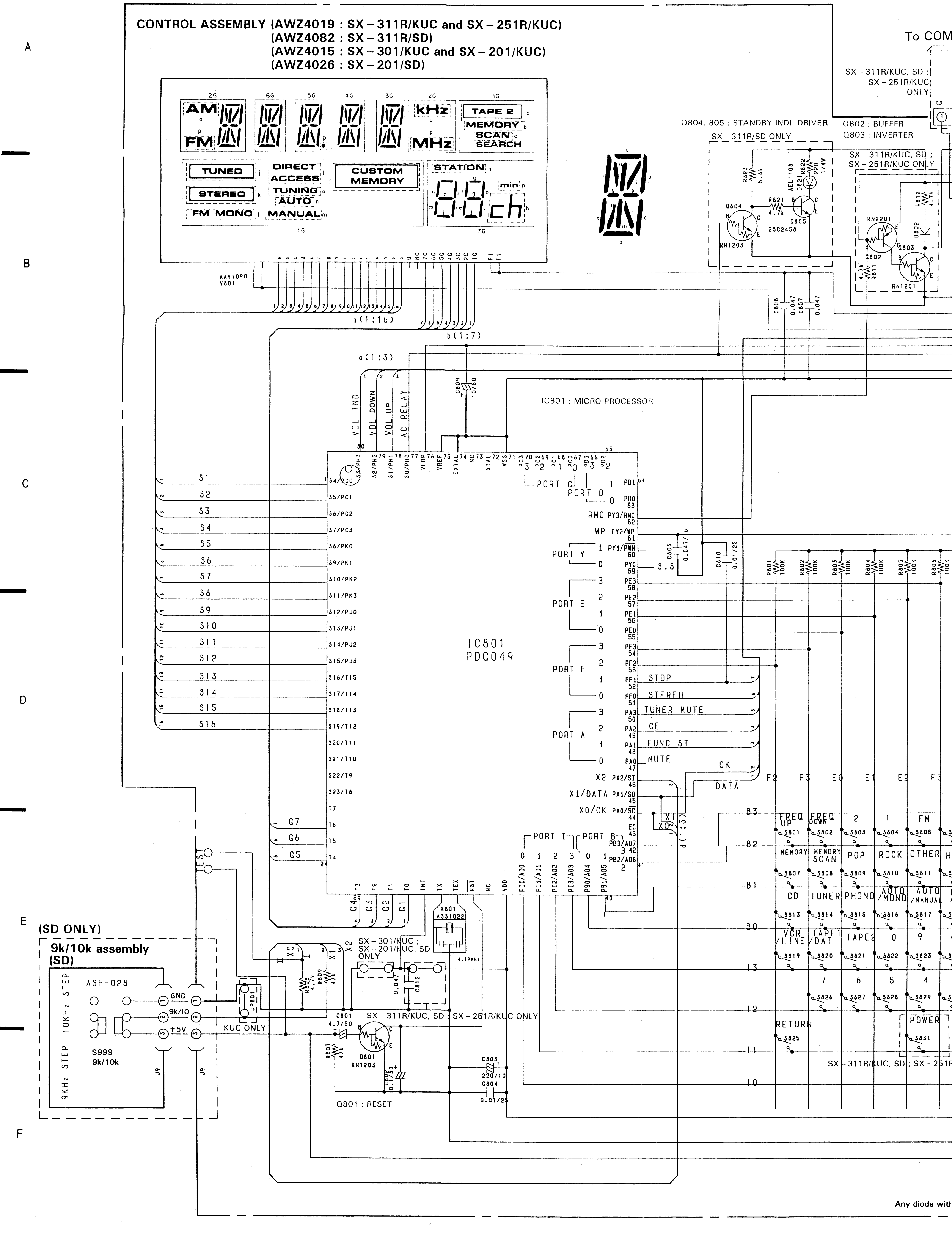
9k/10k assembly

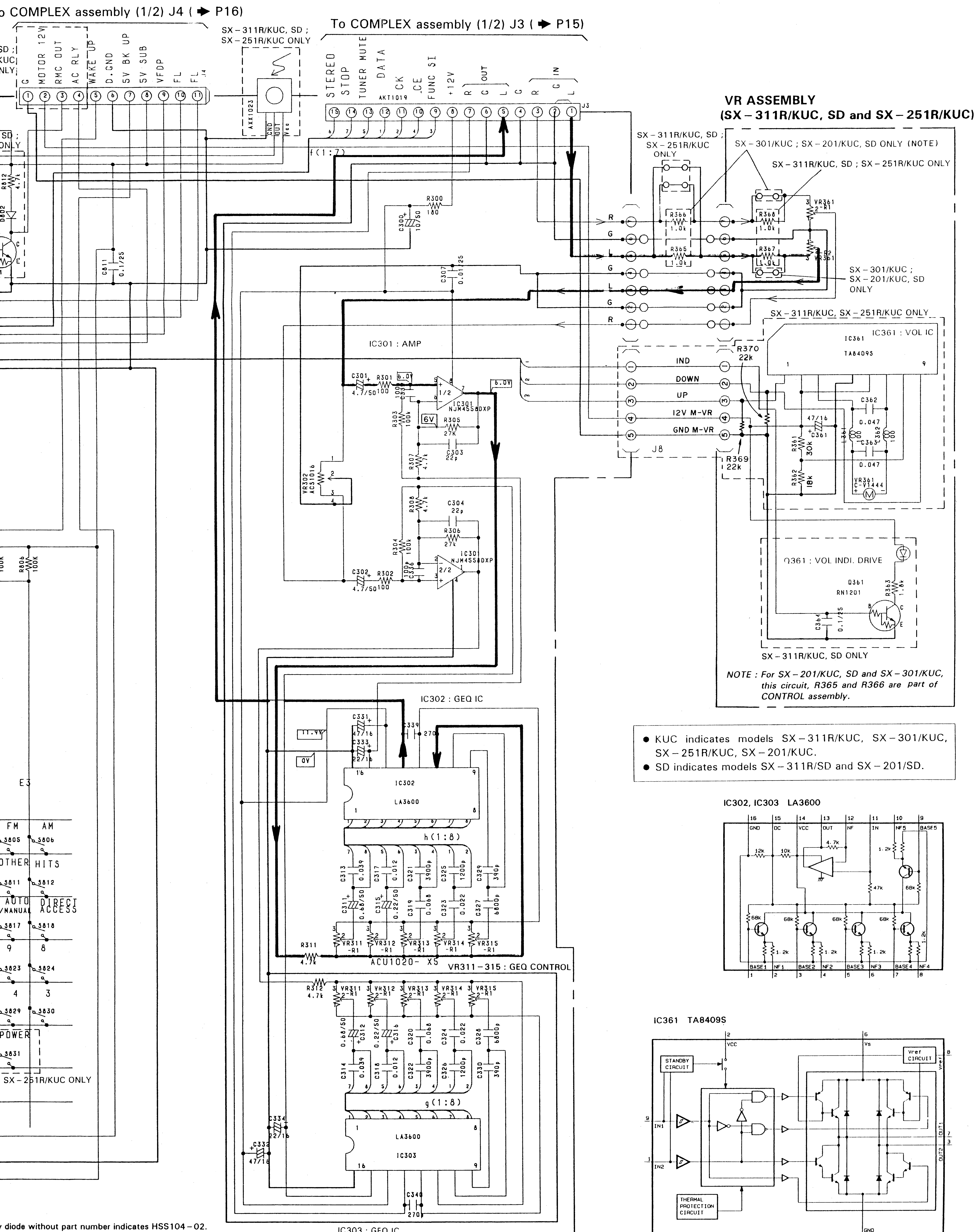
S999	9k/10k (SX-311R/SD; SX-201/SD ONLY)

CONTROL assembly

S801	FREQ UP
S802	FREQ DOWN
S803	2
S804	1
S805	FM
S806	AM
S807	MEMORY
S808	MEMORY SCAN
S809	POP
S810	ROCK
S811	OTHER
S812	HITS
S813	CD
S814	TUNER
S815	PHONO
S816	AUTO/MONO
S817	AUTO/MANUAL
S818	DIRECT ACCESS
S819	VCR/LD
S820	TAPE1/DAT
S821	TAPE2/MONITOR
S822	0
S823	9
S824	8
S825	RETURN
S826	7
S827	6
S828	5
S829	4
S830	3
S831	POWER (SX-311R/KUC, SD; SX-251R/KUC ONLY)

4.2 CONTROL ASSEMBLY, 9k/10k ASSEMBLY AND VR ASSEMBLY


CONTROL ASSEMBLY (AWZ4019 : SX – 311R/KUC and SX – 251R/KUC)
(AWZ4082 : SX – 311R/SD)
(AWZ4015 : SX – 301/KUC and SX – 201/KUC)
(AWZ4026 : SX – 201/SD)
AM
FM
kHz
MHz
TAPE 2
MEMORY
SCAN
SEARCH
TUNED
STEREO
FM MONO
DIRECT
ACCESS
TUNING
AUTO
MANUAL
CUSTOM MEMORY
STATION
min
ch
AAY1090
V801
a(1:16)
b(1:7)
c(1:3)
d(1:3)
To COM
SX – 311R/KUC, SD ; SX – 251R/KUC ONLY
Q804, 805 : STANDBY INDI. DRIVER
SX – 311R/SD ONLY
Q802 : BUFFER
Q803 : INVERTER
SX – 311R/KUC, SD ; SX – 251R/KUC ONLY
R823 5.6k
AEL1108 D821
R822 220 1/4W
R821 4.7k
Q804 RN1203
Q805 2SC2458
RN2201
R812 4.7k
D802
Q802
Q803
R811 4.7k
RN1201
C806 0.047
C807 0.047
C809 10/50
VOL IND
VOL DOWN
VOL UP
AC RELAY
IC801 : MICRO PROCESSOR
IC801
PDG049
PORT C
PORT D
PORT Y
PORT E
PORT F
PORT A
PORT I
PORT B
RMC
WP
X2
X1/DATA
X0/CK
S.S
C805 0.047/16
C810 0.01/25
STOP
STEREO
TUNER MUTE
CE
FUNC ST
MUTE
CK
DATA
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
S16
G7
G6
G5
G4
G3
G2
G1
TEST
R801 100K
R802 100K
R803 100K
R804 100K
R805 100K
R806 100K
F2 F3 E0 E1 E2 E3
B3
B2
B1
B0
I3
I2
I1
I0
FREQ UP
FREQ DOWN
MEMORY
MEMORY SCAN
POP
ROCK
OTHER
CD
TUNER
PHONO
AUTO /MONO
AUTO /MANUAL
VCR /LINE
TAPE1 /DAT
TAPE2
RETURN
POWER
FM
S801 S802 S803 S804 S805
S807 S808 S809 S810 S811
S813 S814 S815 S816 S817
S819 S820 S821 S822 S823
S826 S827 S828 S829
S825
S831
SX – 311R/KUC, SD ; SX – 251R
X801 ASS1022
4.19MHz
SX – 301/KUC ; SX – 201/KUC, SD ONLY
C812
0.047
R808 4.7k
R809 47k
JP801
KUC ONLY
C801 4.7/50
SX – 311R/KUC, SD ; SX – 251R/KUC ONLY
R807 47k
Q801 RN1203
C802 0.1/50
C803 220/10
C804 0.01/25
Q801 : RESET
(SD ONLY)
9k/10k assembly (SD)
ASH-028
10KHz STEP
9KHz STEP
S999 9k/10k
GND
9k/10
+5V
J9
Any diode with
1 2 3 4
A B C D E F


o COMPLEX assembly (1/2) J4 (➡ P16)
To COMPLEX assembly (1/2) J3 (➡ P15)
SX-311R/KUC, SD ; SX-251R/KUC ONLY
G
MOTOR 12V
RMC OUT
AC RLY
WAKE UP
D.GND
5V BK UP
5V SUB
VFDP
FL
FL
AXX1023
GND
OUT
Vcc
STEREO
STOP
TUNER MUTE
DATA
CK
CE
FUNC SI
+12V
R
G
L
OUT
G
R
G
L
IN
AKT1019
J3
f (1 : 7)
R812 4.7k
D802
C811 0.1/25
R300 180
C300 10/50
C307 0.01/25
IC301 : AMP
C301 4.7/50
R301 100
6.0V
IC301 NJM4558DXP
1/2
6.0V
R303 100k
C333 100p
6V
R305 27K
C303 22p
R307 4.7k
VR302 ACS1016
R308 4.7k
C304 22p
R306 27k
R304 100k
C336 100p
IC301 NJM4558DXP
2/2
C302 4.7/50
R302 100
VR ASSEMBLY
(SX-311R/KUC, SD and SX-251R/KUC)
SX-311R/KUC, SD ; SX-251R/KUC ONLY
SX-301/KUC ; SX-201/KUC, SD ONLY (NOTE)
SX-311R/KUC, SD ; SX-251R/KUC ONLY
R366 1.0k
R365 1.0k
R368 1.0k
R367 1.0k
VR361 2-R1
VR361 2-R2
SX-301/KUC ; SX-201/KUC, SD ONLY
SX-311R/KUC, SX-251R/KUC ONLY
IC361 : VOL IC
IC361 TA8409S
R370 22k
IND
DOWN
UP
12V M-VR
GND M-VR
J8
R369 22k
C361 47/16
C362 0.047
C363 0.047
L361
R361 30k
R362 18k
VR361 C-V1444
Q361 : VOL INDI. DRIVE
Q361 RN1201
R363 1.6k
C364 0.1/25
SX-311R/KUC, SD ONLY
IC302 : GEQ IC
C331 47/16
C333 22/16
C339 270
11.4V
0V
IC302 LA3600
h (1 : 8)
C313 0.039
C317 0.012
C321 3900p
C325 1200p
C329 390p
C311 0.68/50
C315 0.22/50
C319 0.068
C323 0.022
C327 6800p
R311 4.7k
VR311-R1
VR312-R1
VR313-R1
VR314-R1
VR315-R1
ACU1020-X5
VR311-315 : GEQ CONTROL
R312 4.7k
C312 0.68/50
C316 0.22/50
C320 0.068
C324 0.022
C328 6800p
C314 0.039
C318 0.012
C322 3900p
C326 1200p
C330 390p
g (1 : 8)
C334 22/16
C332 47/16
LA3600 IC303
C340 270
IC303 : GEQ IC
R805 100k
R806 100k
E3
FM
AM
S805
S806
OTHER
HITS
S811
S812
AUTO /MANUAL
DIRECT ACCESS
S817
S818
9
8
S823
S824
4
3
S829
S830
POWER
S831
SX-251R/KUC ONLY
IC302, IC303 LA3600
GND
DC
VCC
OUT
NF
IN
NF5
BASE5
12k
10k
4.7k
1.2k
47k
68k
BASE1
NF1
BASE2
NF2
BASE3
NF3
BASE4
NF4
IC361 TA8409S
VCC
Vs
STANDBY CIRCUIT
Vref CIRCUIT
Vref
IN1
IN2
OUT1
OUT2
THERMAL PROTECTION CIRCUIT
GND
A
B
C
D
E
F

NOTE : For SX-201/KUC, SD and SX-301/KUC, this circuit, R365 and R366 are part of CONTROL assembly.

- KUC indicates models SX-311R/KUC, SX-301/KUC, SX-251R/KUC, SX-201/KUC.
- SD indicates models SX-311R/SD and SX-201/SD.

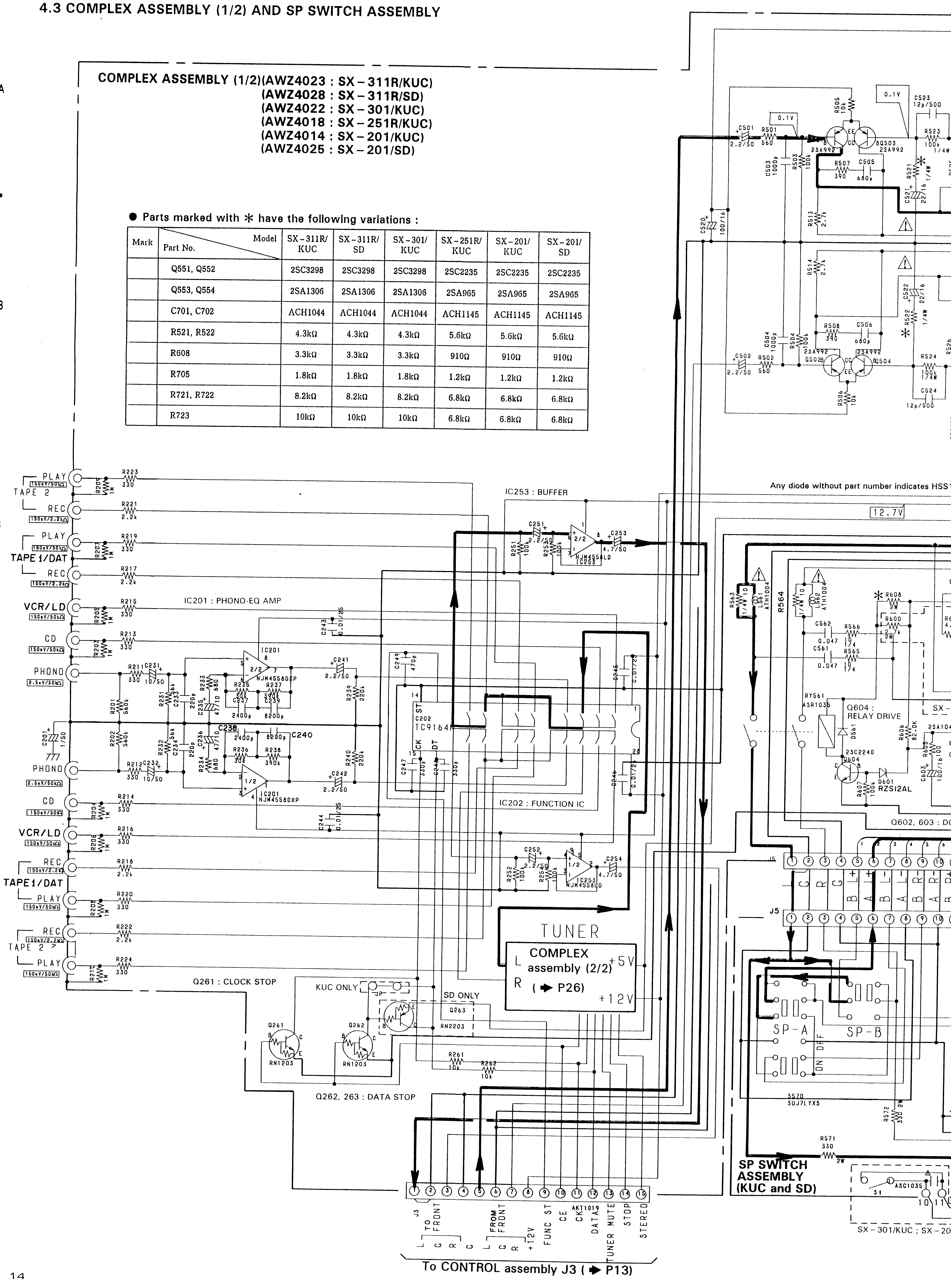
y diode without part number indicates HSS104-02.

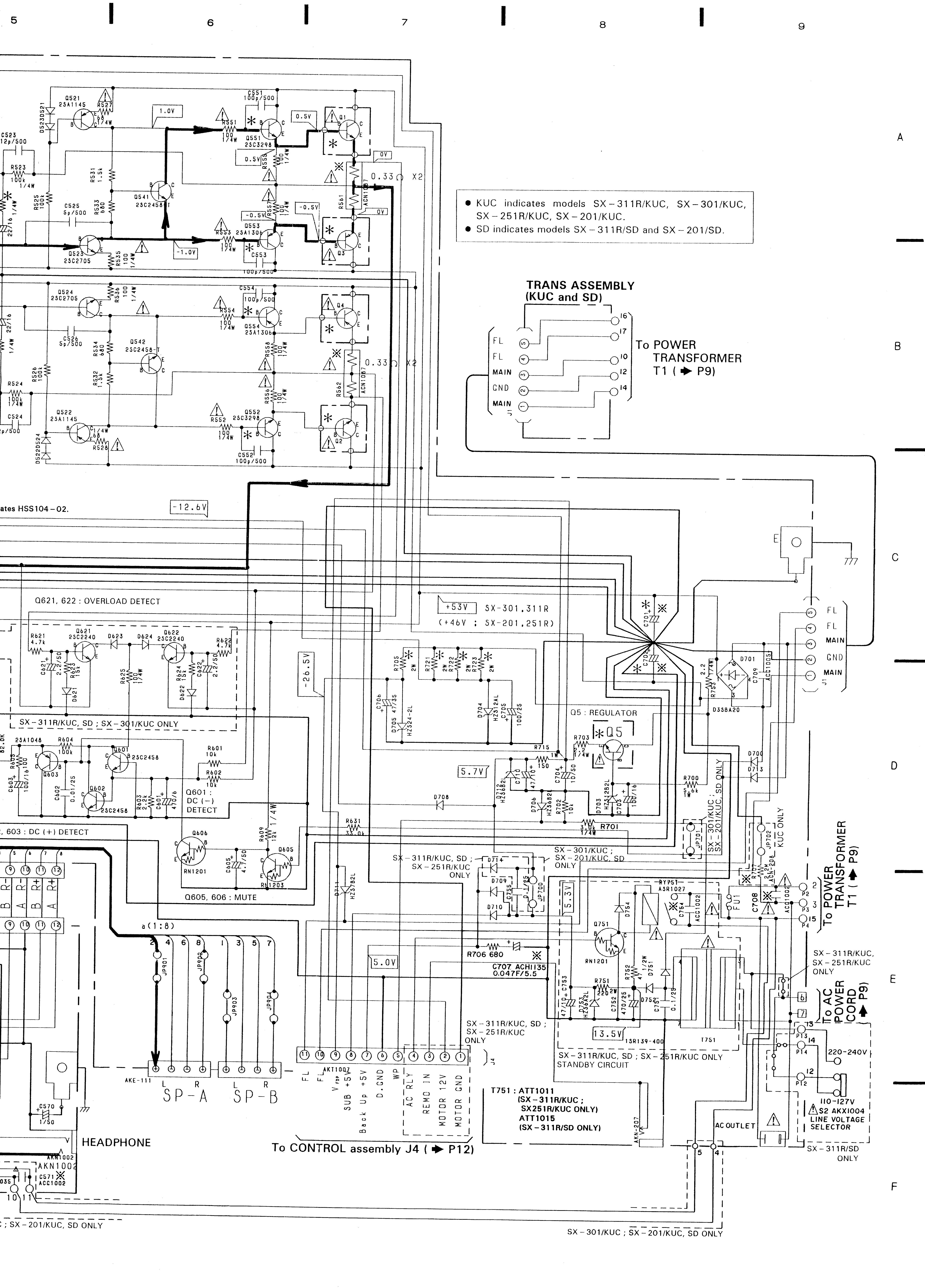
4.3 COMPLEX ASSEMBLY (1/2) AND SP SWITCH ASSEMBLY

COMPLEX ASSEMBLY (1/2)(AWZ4023 : SX-311R/KUC)
(AWZ4028 : SX-311R/SD)
(AWZ4022 : SX-301/KUC)
(AWZ4018 : SX-251R/KUC)
(AWZ4014 : SX-201/KUC)
(AWZ4025 : SX-201/SD)

- Parts marked with ✻ have the following variations :

Mark	Part No. \ Model	SX-311R/ KUC	SX-311R/ SD	SX-301/ KUC	SX-251R/ KUC	SX-201/ KUC	SX-201/ SD
	Q551, Q552	2SC3298	2SC3298	2SC3298	2SC2235	2SC2235	2SC2235
	Q553, Q554	2SA1306	2SA1306	2SA1306	2SA965	2SA965	2SA965
	C701, C702	ACH1044	ACH1044	ACH1044	ACH1145	ACH1145	ACH1145
	R521, R522	4.3kΩ	4.3kΩ	4.3kΩ	5.6kΩ	5.6kΩ	5.6kΩ
	R608	3.3kΩ	3.3kΩ	3.3kΩ	910Ω	910Ω	910Ω
	R705	1.8kΩ	1.8kΩ	1.8kΩ	1.2kΩ	1.2kΩ	1.2kΩ
	R721, R722	8.2kΩ	8.2kΩ	8.2kΩ	6.8kΩ	6.8kΩ	6.8kΩ
	R723	10kΩ	10kΩ	10kΩ	6.8kΩ	6.8kΩ	6.8kΩ


A
B
C
D
E
F
1
2
3
4
5
Any diode without part number indicates HSS1
TAPE 2 PLAY 150mV/50kΩ
REC 150mV/2.2kΩ
TAPE 1/DAT PLAY 150mV/50kΩ
REC 150mV/2.2kΩ
VCR/LD 150mV/50kΩ
CD 150mV/50kΩ
PHONO 2.5mV/50kΩ
IC201 : PHONO-EQ AMP
IC201 NJM4558DXP
IC253 : BUFFER
IC253 NJM4558LD
C202 TC9164N
IC202 : FUNCTION IC
TUNER
COMPLEX assembly (2/2) (➡ P26)
+5V
+12V
Q261 : CLOCK STOP
KUC ONLY
SD ONLY
Q261 RN1203
Q262 RN1203
Q263 RN2203
Q262, 263 : DATA STOP
J3
TO FRONT
FROM FRONT
+12V
FUNC ST
CE
CK
AKT1019
DATA
TUNER MUTE
STOP
STEREO
To CONTROL assembly J3 (➡ P13)
0.1V
12.7V
Q604 : RELAY DRIVE
RY561 ASR1035
Q602, 603 : D
J5
SP-A
SP-B
ON OFF
S570 SUJ7LYXS
SP SWITCH ASSEMBLY (KUC and SD)
ASC1035
SX-301/KUC ; SX-20
D601 RZS12AL
2SC2240
ATH1004
R608 2W
R600
R606 82.0K
R571 330 2W
R572 330 2W

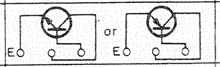
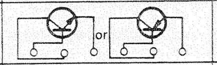
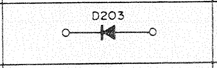
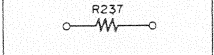
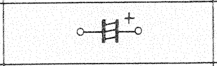
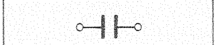

5
6
7
8
9
A
B
C
D
E
F
TRANS ASSEMBLY (KUC and SD)
FL
FL
MAIN
GND
MAIN
J1
To POWER TRANSFORMER T1 (➡ P9)
Q521 2SA1145
Q523 2SC2705
Q541 2SC2458
Q551 2SC3298
Q553 2SA1306
Q524 2SC2705
Q542 2SC2458-T
Q554 2SA1306
Q522 2SA1145
Q552 2SC3298
Q1
Q2
Q3
Q4
0.33Ω X2
ACN1087
1.0V
0.5V
-0.5V
-1.0V
0V
-12.6V
ates HSS104-02.
Q621, 622 : OVERLOAD DETECT
Q621 2SC2240
Q622 2SC2240
SX-311R/KUC, SD ; SX-301/KUC ONLY
Q601 : DC (–) DETECT
2, 603 : DC (+) DETECT
Q605, 606 : MUTE
Q606 RN1201
Q605 RN1203
+53V SX-301, 311R
(+46V ; SX-201, 251R)
-26.5V
5.7V
5.0V
5.3V
13.5V
Q5 : REGULATOR
D358A20
D701
ACD1005
SX-301/KUC ; SX-201/KUC, SD ONLY
KUC ONLY
SX-311R/KUC, SD ; SX-251R/KUC ONLY
SX-301/KUC ; SX-201/KUC, SD ONLY
RY751 ASR1027
Q751 RN1201
R706 680
C707 ACH1135 0.047F/5.5
SX-311R/KUC, SD ; SX-251R/KUC ONLY
SX-311R/KUC, SD ; SX-251R/KUC ONLY
STANDBY CIRCUIT
13R139-400
T751
T751 : ATT1011 (SX-311R/KUC ; SX251R/KUC ONLY) ATT1015 (SX-311R/SD ONLY)
AKN-207
AC OUTLET
To POWER TRANSFORMER T1 (➡ P9)
SX-311R/KUC, SX-251R/KUC ONLY
To AC POWER CORD (➡ P9)
220-240V
110-127V
S2 AKX1004 LINE VOLTAGE SELECTOR
SX-311R/SD ONLY
SX-301/KUC ; SX-201/KUC, SD ONLY
a (1:8)
JP901
JP902
JP903
JP904
AKE-111
SP-A
SP-B
L R
AKT1007
FL FL V_FDP SUB +5V Back Up +5V D.GND WP AC RLY REMO IN MOTOR 12V MOTOR GND
J4
To CONTROL assembly J4 (➡ P12)
HEADPHONE
AKN1002
C571 ACG1002
C; SX-201/KUC, SD ONLY

- KUC indicates models SX-311R/KUC, SX-301/KUC, SX-251R/KUC, SX-201/KUC.
- SD indicates models SX-311R/SD and SX-201/SD.

4.4 PCB CONNECTION DIAGRAM

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.
3. The capactor terminal marked with ◎(double circles) shows negatine terminal.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

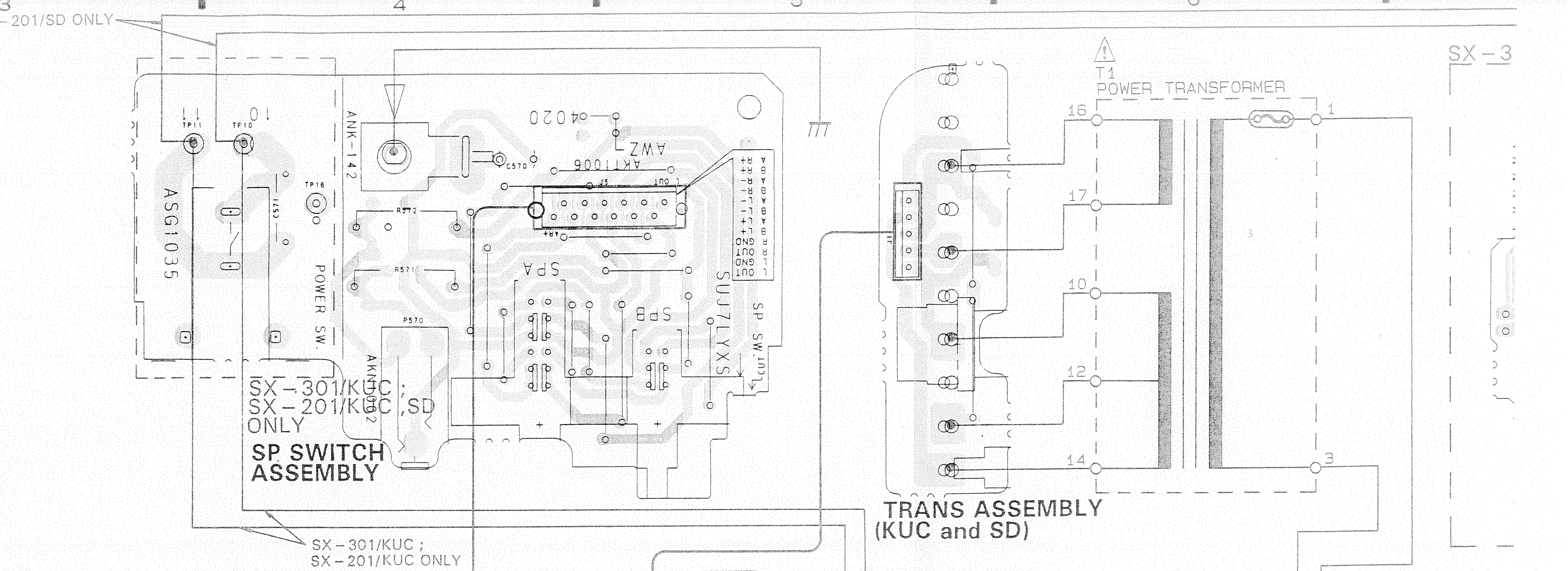
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E		Transistor
Q215		Radiator type transistor
D203 ◎	D203 	Diode
R237	R237 	Resistor
C513 ◎		Capacitor (Polarized)
C518		Capacitor (Non-polarized)

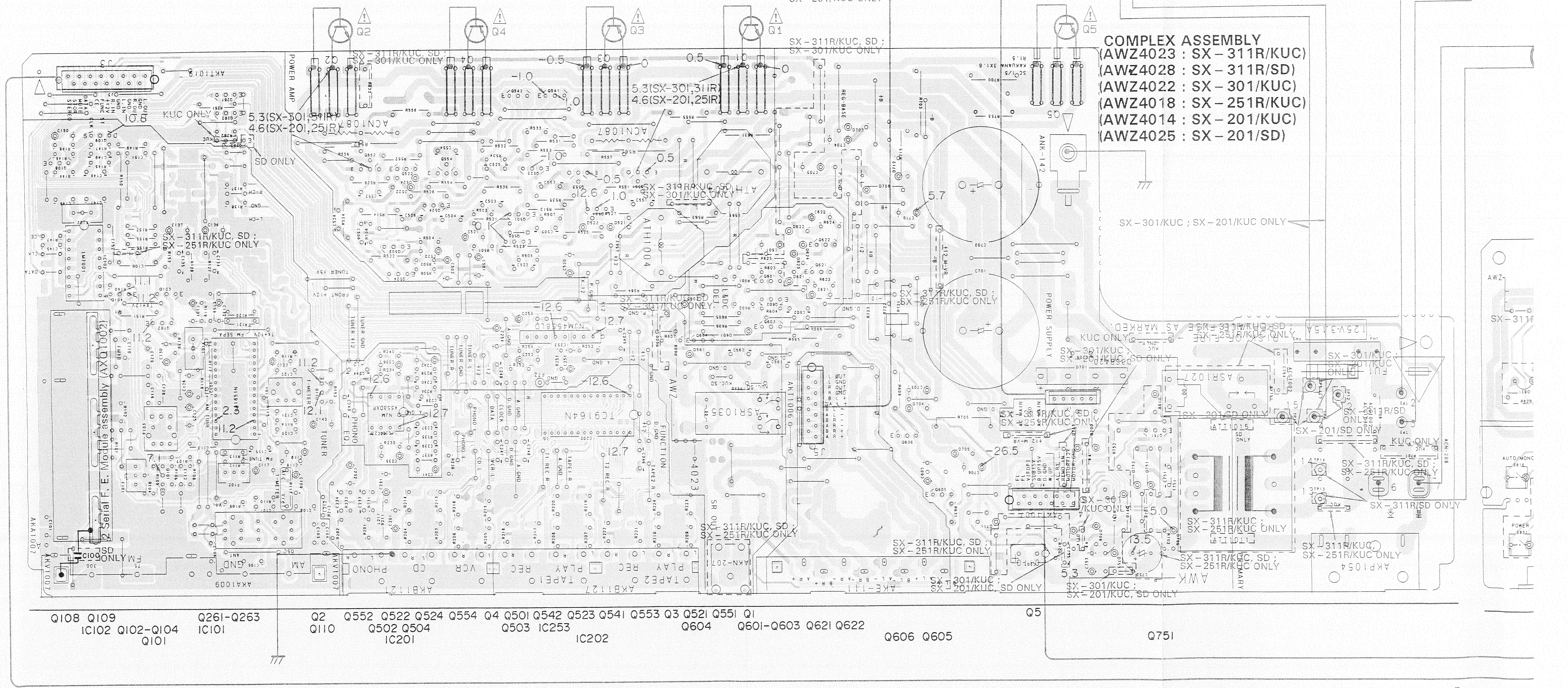
Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

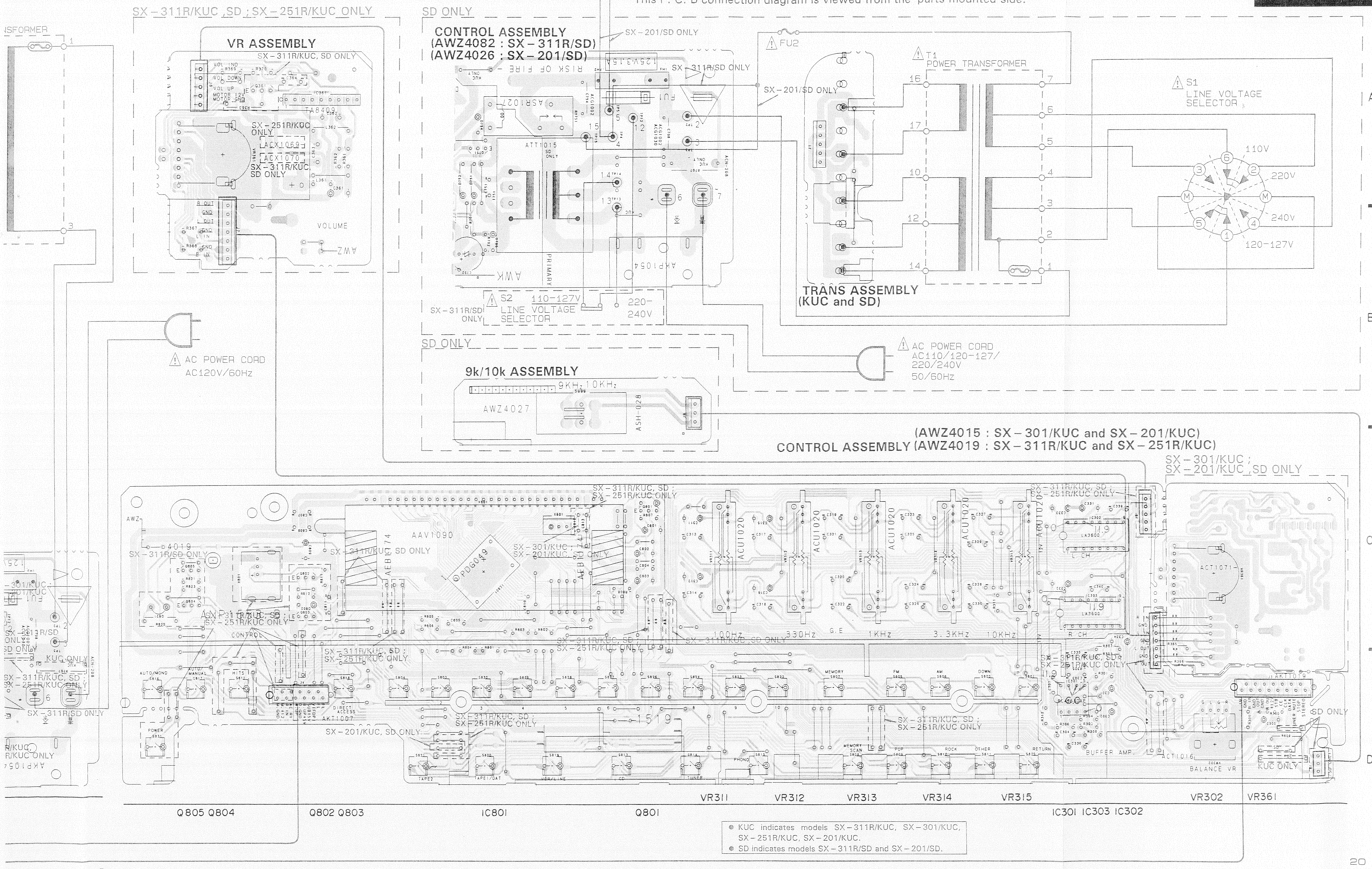
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on P.C.B. indicate that replacement parts must be of identical designation.

(POUR MODÈLE CANADIEN SEULEMENT)
Sur P.C.I., les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) indiquent que les pièces de remplacement doivent avoir la même désignation.


SX-201/SD ONLY
ASG1035
ANK-142
POWER SW.
AKN1002
SX-301/KUC ;
SX-201/KUC ,SD
ONLY
SP SWITCH
ASSEMBLY
SPA
SPB
SUJ7LYXS
SP SW
AWZ
AKT1006
SX-301/KUC ;
SX-201/KUC ONLY
T1
POWER TRANSFORMER
16
17
10
12
14
1
3
TRANS ASSEMBLY
(KUC and SD)

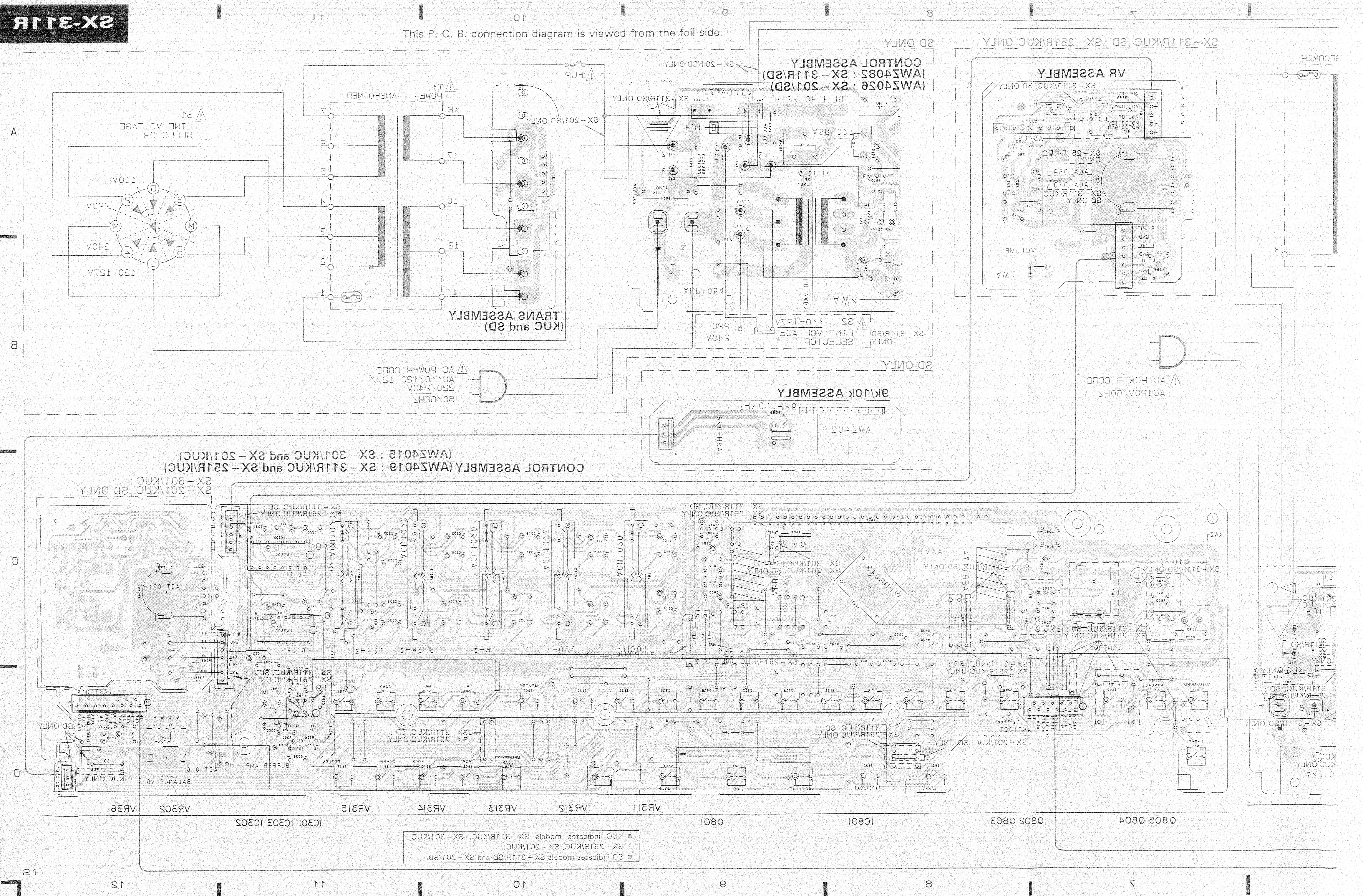

Q2
Q4
Q3
Q1
Q5
SX-311R/KUC, SD ;
SX-301/KUC ONLY
COMPLEX ASSEMBLY
(AWZ4023 : SX-311R/KUC)
(AWZ4028 : SX-311R/SD)
(AWZ4022 : SX-301/KUC)
(AWZ4018 : SX-251R/KUC)
(AWZ4014 : SX-201/KUC)
(AWZ4025 : SX-201/SD)
POWER AMP
AKT1018
ACN1087
5.3(SX-301,311R)
4.6(SX-201,251R)
KUC ONLY
SD ONLY
ATH1004
ANK-142
POWER SUPPLY
SX-301/KUC ; SX-201/KUC ONLY
SX-311R/KUC, SD ;
SX-251R/KUC ONLY
2 Serial F. E. Module assembly (AXQ1002)
AKA1007
AKV1007
AKA1009
AKB1121
AKB1127
TC9164N
AWZ
FUNCTION
ASR1035
ASR1027
AKT1006
ATT1015
AWK
AKN-207
AKE-111
AKP1054
FM
AM
GND
PHONO
CD
VCR
REC
PLAY
TAPE1
TAPE2
TUNER
PHONO EQ
KUC ONLY
SX-201/SD ONLY
SX-311R/SD ONLY
SX-301/KUC ;
SX-201/KUC, SD ONLY
Q108 Q109
IC102 Q102-Q104
Q101
Q261-Q263
IC101
Q2
Q110
Q552 Q522 Q524 Q554 Q4 Q501 Q542 Q523 Q541 Q553 Q3 Q521 Q551 Q1
Q502 Q504
IC201
Q503 IC253
IC202
Q604
Q601-Q603 Q621 Q622
Q606 Q605
Q5
Q751

This P. C. B connection diagram is viewed from the parts mounted side.

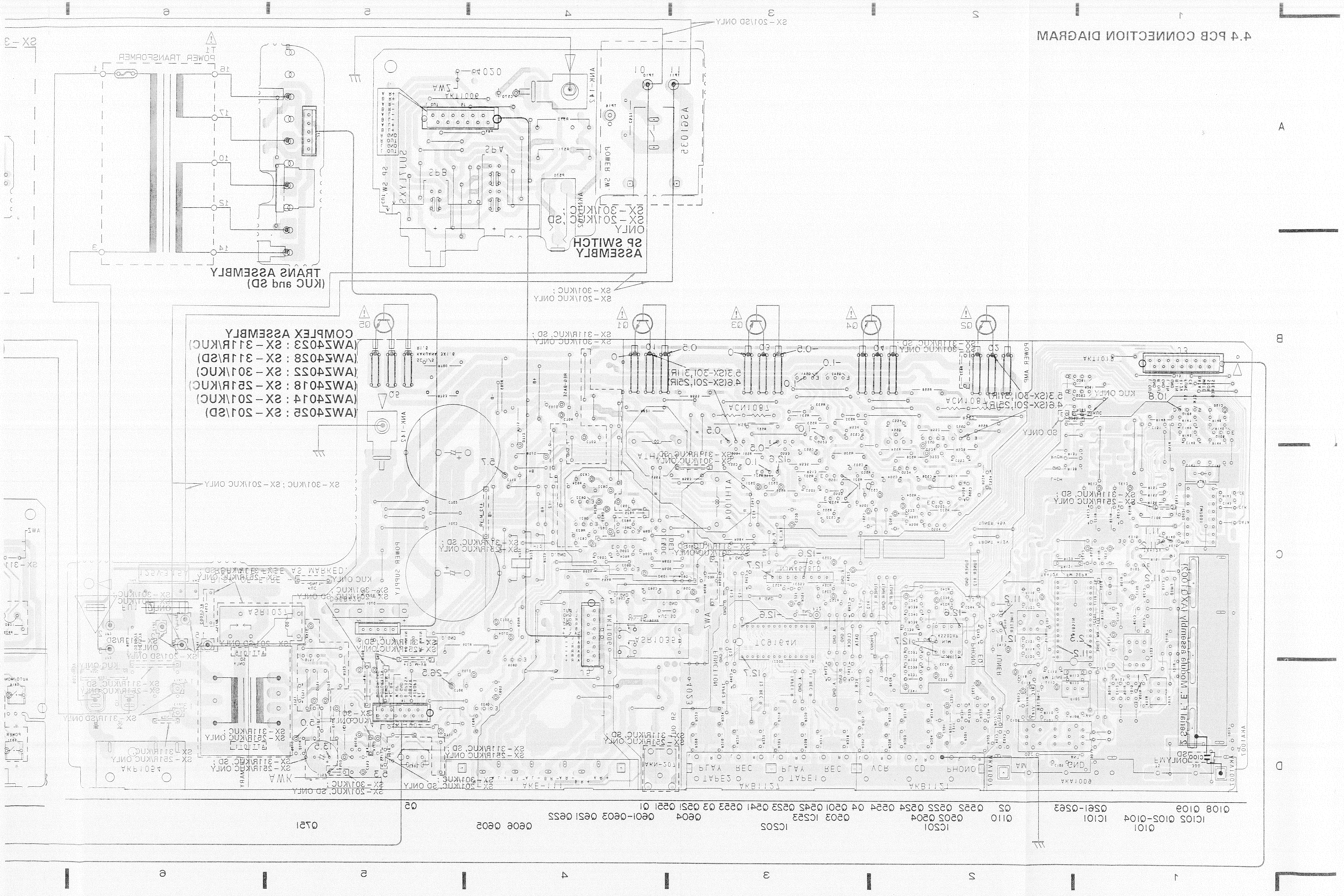

7
8
9
10
11
12
A
B
C
D
SX-311R/KUC ,SD ; SX-251R/KUC ONLY
VR ASSEMBLY
SX-311R/KUC, SD ONLY
SX-251R/KUC ONLY
ACX1069
ACX1070
SX-311R/KUC SD ONLY
TA8409
VOLUME
AWZ
SD ONLY
CONTROL ASSEMBLY
(AWZ4082 : SX-311R/SD)
(AWZ4026 : SX-201/SD)
SX-201/SD ONLY
SX-311R/SD ONLY
SX-201/SD ONLY
RISK OF FIRE
125V3.15A
FU1
ASR1027
ATT1015 SD ONLY
PRIMARY
AKP1054
AWK
S2 LINE VOLTAGE SELECTOR
110-127V
220-240V
SX-311R/SD ONLY
FU2
T1 POWER TRANSFORMER
TRANS ASSEMBLY (KUC and SD)
S1 LINE VOLTAGE SELECTOR
110V
220V
240V
120-127V
AC POWER CORD AC120V/60Hz
AC POWER CORD AC110/120-127/220/240V 50/60Hz
SD ONLY
9k/10k ASSEMBLY
9KHz 10KHz
AWZ4027
ASH-028
CONTROL ASSEMBLY (AWZ4015 : SX-301/KUC and SX-201/KUC)
(AWZ4019 : SX-311R/KUC and SX-251R/KUC)
SX-301/KUC ; SX-201/KUC ,SD ONLY
SX-311R/KUC, SD ; SX-251R/KUC ONLY
AAV1090
PDG049
AEB1074
SX-311R/KUC SD ONLY
SX-301/KUC ; SX-201/KUC, SD ONLY
SX-311R/SD ONLY
ACU1020
LA3600
L CH
R CH
ACT1071
100Hz
330Hz
G.E
1KHz
3.3KHz
10KHz
AKT1007
AKT1019
ACT1016
SX-201/KUC, SD ONLY
KUC ONLY
SD ONLY
BUFFER AMP.
BALANCE VR
AUTO/MONO
AUTO/MANUAL
HITS
CONTROL
DIRECT ACCESS
POWER
MEMORY
FM
AM
DOWN
UP
MEMORY SCAN
POP
ROCK
OTHER
RETURN
TAPE2
TAPE1/DAT
VDP/LINE
CD
PHONO
TUNER
Q805 Q804
Q802 Q803
IC801
Q801
VR311
VR312
VR313
VR314
VR315
IC301 IC303 IC302
VR302
VR361

- KUC indicates models SX-311R/KUC, SX-301/KUC, SX-251R/KUC, SX-201/KUC.
- SD indicates models SX-311R/SD and SX-201/SD.

This P. C. B. connection diagram is viewed from the foil side.

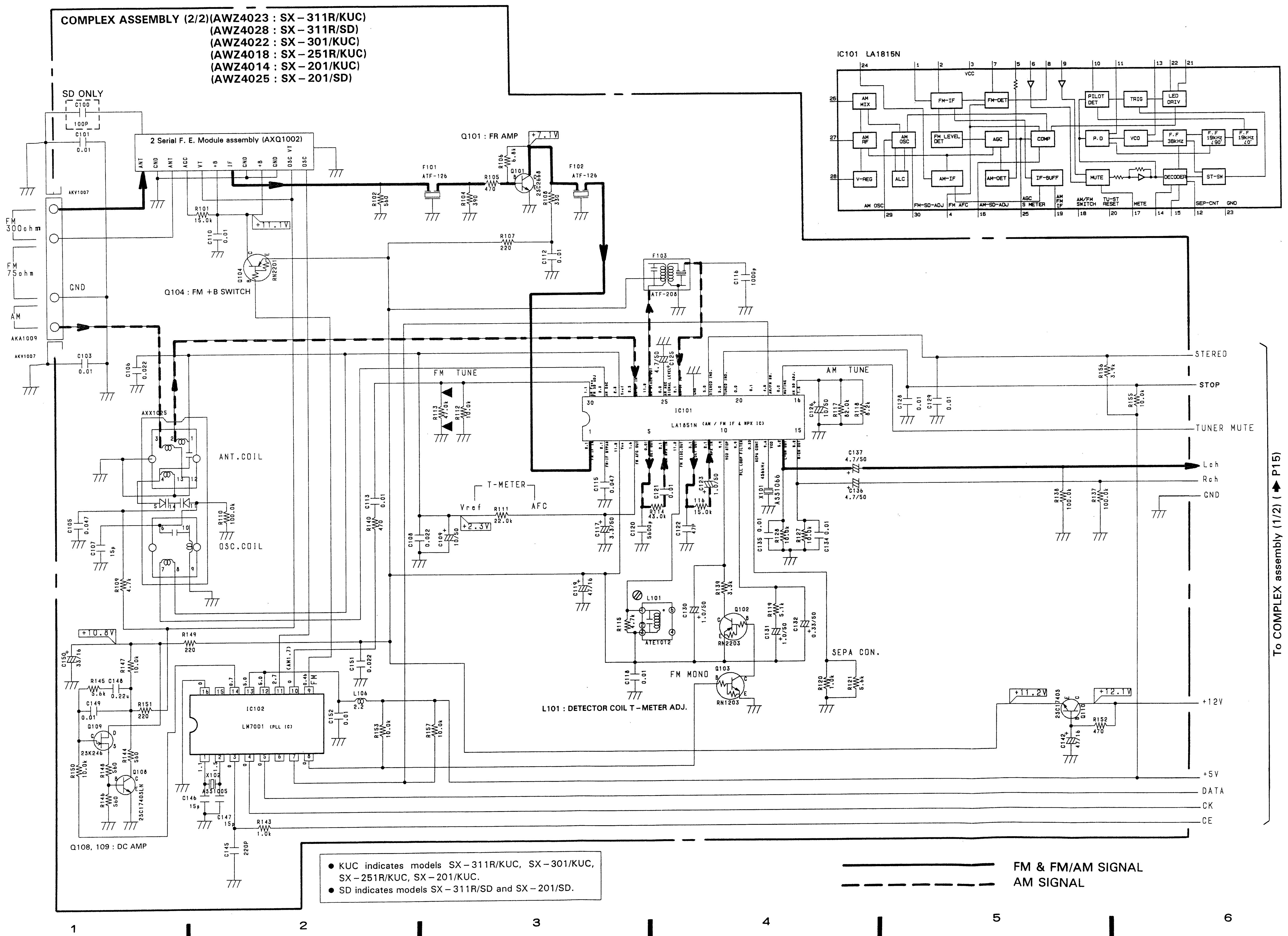

12
11
10
9
8
7
A
B
C
D
TRANS ASSEMBLY (KUC and SD)
T1 POWER TRANSFORMER
S1 LINE VOLTAGE SELECTOR
110V
220V
240V
120-127V
FU2
SX-201/SD ONLY
CONTROL ASSEMBLY (AWZ4082 : SX-311R/SD) (AWZ4026 : SX-201/SD)
SD ONLY
SX-311R/SD ONLY
RISK OF FIRE
S2 LINE VOLTAGE SELECTOR 110-127V 220-240V
SX-311R/SD ONLY
SX-311R/KUC, SD ; SX-251R/KUC ONLY
VR ASSEMBLY
VOLUME
AC POWER CORD AC110/120-127/220/240V 50/60Hz
9K/10K ASSEMBLY
AC POWER CORD AC120V/60Hz
CONTROL ASSEMBLY (AWZ4019 : SX-311R/KUC and SX-251R/KUC) (AWZ4015 : SX-301/KUC and SX-201/KUC)
SX-301/KUC ; SX-201/KUC, SD ONLY
BALANCE VR
BUFFER AMP
VR361
VR302
VR315
VR314
VR313
VR312
VR311
IC302 IC303 IC301
Q801
IC801
Q802 Q803
Q804 Q805
● KUC indicates models SX-311R/KUC, SX-301/KUC, SX-251R/KUC, SX-201/KUC.
● SD indicates models SX-311R/SD and SX-201/SD.

4.4 PCB CONNECTION DIAGRAM


TRANS ASSEMBLY
(KUC and SD)
SP SWITCH
ASSEMBLY
SX-301/KUC ;
SX-201/KUC, SD
ONLY
COMPLEX ASSEMBLY
(AWZ4023 : SX-311R/KUC)
(AWZ4028 : SX-311R/SD)
(AWZ4022 : SX-301/KUC)
(AWZ4018 : SX-251R/KUC)
(AWZ4014 : SX-201/KUC)
(AWZ4025 : SX-201/SD)
POWER TRANSFORMER
POWER SW.
SX-201/SD ONLY
SX-301/KUC ; SX-201/KUC ONLY
SD ONLY
KUC ONLY
PLAY
REC
PHONO
CD
VCR
TAPE1
TAPE2
Q5
Q1
Q3
Q4
Q2
A
B
C
D
1
2
3
4
5
6

4.5 COMPLEX ASSEMBLY (2/2)(TUNER SECTION)

COMPLEX ASSEMBLY (2/2)(AWZ4023 : SX-311R/KUC)
(AWZ4028 : SX-311R/SD)
(AWZ4022 : SX-301/KUC)
(AWZ4018 : SX-251R/KUC)
(AWZ4014 : SX-201/KUC)
(AWZ4025 : SX-201/SD)


1
2
3
4
5
6
A
B
C
D
SD ONLY
C100
100P
C101
0.01
AKY1007
FM 300ohm
FM 75ohm
GND
AM
AKA1009
2 Serial F. E. Module assembly (AXQ1002)
ANT
GND
AGC
VT
+B
IF
OSC VT
OSC
R101
15.0k
C110
0.01
+11.1V
Q104 : FM +B SWITCH
RN2201
Q101 : FR AMP
+7.1V
R106
6.8k
Q101
2SC2668
F101
ATF-126
R105
470
R104
390
R102
560
R108
330
F102
ATF-126
R107
220
C112
0.01
F103
ATF-208
C116
1000p
C103
0.01
C106
0.022
AXX1025
ANT.COIL
OSC.COIL
R110
100.0k
C105
0.047
C107
15p
R109
4.7k
FM TUNE
R113
47.0k
R112
10.0k
T-METER
Vref
AFC
R111
22.0k
+2.3V
C113
0.01
R140
470
C108
0.022
C109
10/50
C115
0.047
C117
3.3/50
C120
5600p
R114
43.0k
C121
0.01
C122
47P
R116
15.0k
C123
1.0/50
C125
4.7/50
IC101
LA1851N (AM / FM IF & MPX IC)
30
25
20
16
1
5
10
15
AM TUNE
C126
R117
82.0k
R118
6.8k
C128
0.01
C129
0.01
X101
456kHz
ASS1066
C135
0.01
R128
10.0k
R127
10.0k
C134
0.01
C137
4.7/50
C136
4.7/50
R138
100.0k
R137
100.0k
R156
3.3k
R155
10.0k
STEREO
STOP
TUNER MUTE
Lch
Rch
GND
+12V
+5V
DATA
CK
CE
To COMPLEX assembly (1/2) (➡ P15)
C119
47/16
L101
ATE1012
R115
4.7k
C130
1.0/50
R139
3.3k
Q102
RN2203
R119
5.1k
C131
1.0/50
C132
0.33/50
SEPA CON.
C118
0.01
FM MONO
Q103
RN1203
L101 : DETECTOR COIL T-METER ADJ.
R120
1.5k
R121
6.8k
+11.2V
+12.1V
2SC1740S
Q110
R152
470
C142
47/16
+10.8V
C150
33/16
R149
220
R147
10.0k
R145
3.6k
C148
0.22μ
C149
0.01
R151
220
Q109
2SK246
R144
560
R150
10.0k
R148
560
Q108
2SC1740SLN
R146
560
Q108, 109 : DC AMP
IC102
LM7001 (PLL IC)
C151
0.022
L106
C152
0.01
R153
10.0k
R157
10.0k
X102
ASS1005
C146
15p
C147
15p
R143
1.0k
C145
220P
IC101 LA1815N
VCC
AM MIX
AM RF
V-REG
AM OSC
ALC
FM-IF
FM LEVEL DET
AM-IF
FM-DET
AGC
AM-DET
COMP
IF-BUFF
PILOT DET
TRIG
LED DRIV
P.D
VCO
F.F 38KHz
F.F 19KHz ∠90°
F.F 19KHz ∠0°
MUTE
DECODER
ST-SW
AM OSC
FM-SD-ADJ
FM AFC
AM-SD-ADJ
AGC S METER
AM FM IF
AM/FM SWITCH
TU-ST RESET
METE
SEP-CNT
GND

- KUC indicates models SX-311R/KUC, SX-301/KUC, SX-251R/KUC, SX-201/KUC.
- SD indicates models SX-311R/SD and SX-201/SD.

FM & FM/AM SIGNAL

AM SIGNAL

5. PCB PARTS LIST

NOTES:

- *Part without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω 56 × 10^1 561..........................RD1/8PM [5] [6] [1] J
47kΩ 47 × 10^3 473..........................RD1/4PS [4] [7] [3] J
0.5Ω 0R5...RN2H [0] [R] [5] K
1Ω 010...RS1P [0] [1] [0] K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562 × 10^1 5621........................RN1/4SR [5] [6] [2] [1] F

LIST OF ASSEMBLIES

Mark	No.	Description	Parts No.
◉		CONTROL ASSEMBLY	AWZ4019
		SP SWITCH ASSEMBLY	
◉		COMPLEX ASSEMBLY	AWZ4023
		VR ASSEMBLY	
		TRANS ASSEMBLY	

◉ CONTROL ASSEMBLY (AWZ4019)

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC301	OP-AMP IC	NJM4558DXP
	IC302, 303	AUDIO IC	LA3600
	IC801	RECEIVER CONTROL	PDG049-B
	Q801	TRANSISTOR	RN1203
	Q802	TRANSISTOR	RN2201
	Q803	TRANSISTOR	RN1201
	D802	DIODE	HSS104-02

SWITCHES

Mark	No.	Description	Parts No.
	S801-831	SWITCH (FREQ. UP, FREQ. DOWN, 2, 1, FM, AM, MEMORY, MEMORY SCAN, POP, ROCK, OTHER, HITS, CD, TUNER, PHONO, AUTO/MONO, AUTO/MANUAL, DIRECT ACCESS, VCR/LINE, TAPE1/DAT, TAPE2, 10, 9, 8, RETURN, 7, 6, 5, 4, 3, POWER)	ASG1034

CAPACITORS

Mark	No.	Description	Parts No.
	C300	ELECTR. CAPACITOR	CEJA100M16
	C301, 302	ELECTR. CAPACITOR	CEAS4R7M50
	C303, 304	CERAMIC CAPACITOR	CCCSL220J50
	C307	AXIAL CERAMIC CAPACITOR	CKPUYF103Z25
	C311, 312	ELECTR. CAPACITOR	CEASR68M50
	C313, 314	MYLAR FILM CAPACITOR	CQMA393K50
	C315, 316	ELECTR. CAPACITOR	CEASR22M50
	C317, 318	MYLAR FILM CAPACITOR	CQMA123K50
	C319, 320	MYLAR FILM CAPACITOR	CQMA683K50
	C321, 322	MYLAR FILM CAPACITOR	CQMA392K50
	C323, 324	MYLAR FILM CAPACITOR	CQMA223J50
	C325, 326	CERAMIC CAPACITOR	CKCYB122K50
	C327, 328	MYLAR FILM CAPACITOR	CQMA682K50
	C329, 330	CERAMIC CAPACITOR	CKCYB391K50
	C331, 332	ELECTR. CAPACITOR	CEAS470M16
	C333, 334	ELECTR. CAPACITOR	CEAS220M16
	C335, 336	CERAMIC CAPACITOR	CCMSL101J50
	C339, 340	CERAMIC CAPACITOR	CCCSL271J50
	C801	ELECTR. CAPACITOR	CEAS4R7M50
	C802	ELECTR. CAPACITOR	CEAS0R1M50
	C803	ELECTR. CAPACITOR	CEAS221M10
	C804	AXIAL CERAMIC CAPACITOR	CKPUYF103Z25
	C805	AXIAL CERAMIC CAPACITOR	CKPUYF473Z16
	C807, 808	CERAMIC CAPACITOR	CKCYF473Z50
	C809	ELECTR. CAPACITOR	CEAS100M50
	C810	AXIAL CERAMIC CAPACITOR	CKPUYF103Z25
	C811	CERAMIC CAPACITOR	CKCYX104M25
	C812	AXIAL CERAMIC CAPACITOR	CKPUYF473Z16

RESISTORS

Mark	No.	Description	Parts No.
	VR302	VARIABLE (500k-X1)	ACS1016
	VR311-315	VR	ACU1020
		Other resistors	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Parts No.
		FL SPACER	AEB1174
		REMOTE RECEIVER UNIT	AXX1023
	V801	FL TUBE	AAV1090
	X801	CERAMIC OSCILLATOR (4.19MHz)	ASS1022

SP SWITCH ASSEMBLY

SWITCH

Mark	No.	Description	Parts No.
	S570	PUSH SWITCH	SUJ7LYXS

CAPACITORS

Mark	No.	Description	Parts No.
	C570	ELECTR. CAPACITOR	CEAS010M50

RESISTORS

Mark	No.	Description	Parts No.
	R571, 572	METAL OXIDE RESISTOR	RS2LMF331J

OTHERS

Mark	No.	Description	Parts No.
		JACK (HEADPHONE)	AKN1002

◉ COMPLEX ASSEMBLY (AWZ4023)

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC101	AM/FM IC	LA1851N
	IC102	PLL IC	LM7001
	IC201	OP-AMP IC	NJM4558DXP
	IC202	E-SW IC	TC9164N
	IC253	OP-AMP IC	NJM4558LD
	Q101	TRANSISTOR	2SC2668
	Q102	TRANSISTOR	RN2203
	Q103	TRANSISTOR	RN1203
	Q104	TRANSISTOR	RN2201
	Q108	TRANSISTOR	2SC1740SLN
	Q109	N-FET	2SK246
	Q110	TRANSISTOR	2SC1740S
	Q261, 262	TRANSISTOR	RN1203
	Q501-504	TRANSISTOR	2SA992
	Q521, 522	TRANSISTOR	2SA1145
	Q523, 524	TRANSISTOR	2SC2705
	Q541, 542	TRANSISTOR	2SC2458
	Q551, 552	TRANSISTOR	2SC3298
	Q553, 554	TRANSISTOR	2SA1306
	Q601, 602	TRANSISTOR	2SC2458
	Q603	TRANSISTOR	2SA1048
	Q604	TRANSISTOR	2SC2240
	Q605	TRANSISTOR	RN1203
	Q606	TRANSISTOR	RN1201
	Q621, 622	TRANSISTOR	2SC2240
	Q751	TRANSISTOR	RN1201
	D521-524	DIODE	HSS104-02
	D561	DIODE	HSS104-02
	D601	ZENER DIODE	HZS12AL
	D621-624	DIODE	HSS104-02
	D700	DIODE	HSS104-02
	D701	DIODE	D3SBA20 (A)
	D703	ZENER DIODE	HZS12B2L
	D704	ZENER DIODE	HZS12AL
	D705	ZENER DIODE	HZS24-2L
	D706	ZENER DIODE	HZS6B2L
	D708-710	DIODE	HSS104-02
	D711	ZENER DIODE	HZS7B2L
	D712	ZENER DIODE	HZS6B2L
	D713, 714	DIODE	HSS104-02
	D751	DIODE	HSS104-02
	D752	DIODE	S5566
	D753	ZENER DIODE	HZS6A2L
	D754	DIODE	HSS104-02

RELAY

Mark	No.	Description	Parts No.
	RY561	RELAY	ASR1035
	RY751	RELAY	ASR1027

COILS & TRANSFORMER

Mark	No.	Description	Parts No.
	F101, 102	CERAMIC FILTER	ATF-126
	F103	CERAMIC FILTER	ATF-208
	L101	COIL	ATE1012
	L106	AXIAL INDUCTOR	LAU2R2M
	L561, 562	COIL	ATH1004
	T751	POWER TRANSFORMER	ATT1011

CAPACITORS

Mark	No.	Description	Parts No.
	C101, 103	CERAMIC CAPACITOR	CKPUYY103N16
	C105	AXIAL CERAMIC CAPACITOR	CKPUYF473Z16
	C106	AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C107	AXIAL CERAMIC C.	CCPUCH150J50
	C108	AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C109	ELECTR. CAPACITOR	CEAS100M50
	C110	CERAMIC CAPACITOR	CKPUYY103N16
	C112, 113	CERAMIC CAPACITOR	CKPUYY103N16
	C115	CERAMIC CAPACITOR	CKDYX473M25
	C116	CERAMIC CAPACITOR	CKPUYB102K50
	C117	ELECTR. CAPACITOR	CEAS3R3M50
	C118	CERAMIC CAPACITOR	CKPUYY103N16
	C119	ELECTR. CAPACITOR	CEAS470M16
	C120	CERAMIC CAPACITOR	CKPUYX562M16

Mark	No.	Description	Parts No.
	C121	CERAMIC CAPACITOR	CKPUYY103N16
	C122	AXIAL CERAMIC C.	CCPUSL470J50
	C123	ELECTR. CAPACITOR	CEAS010M50
	C125	ELECTR. CAPACITOR	CEAS4R7M50
	C126	ELECTR. CAPACITOR	CEAS100M50
	C128, 129	CERAMIC CAPACITOR	CKPUYY103N16
	C130, 131	ELECTR. CAPACITOR	CEAS010M50
	C132	ELECTR. CAPACITOR	CEASR33M50
	C134, 135	CERAMIC CAPACITOR	CKCYB103K50
	C136, 137	ELECTR. CAPACITOR	CEAS4R7M50
	C142	ELECTR. CAPACITOR	CEAS470M16
	C145	CERAMIC CAPACITOR	CKPUYB221K50
	C146, 147	AXIAL CERAMIC C.	CCPUCH150J50
	C148	AUDIO FILM CAPACITOR	CFTXA224J50
	C149	AUDIO FILM CAPACITOR	CFTXA103J50
	C150	ELECTR. CAPACITOR	CEAS330M16
	C151	AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C152	CERAMIC CAPACITOR	CKPUYY103N16
	C201	ELECTR. CAPACITOR	CEAS010M50
	C231, 232	ELECTR. CAPACITOR	CEAS100M50
	C233, 234	CERAMIC CAPACITOR	CCCSL221J50
	C235, 236	ELECTR. CAPACITOR	CEAS470M10
	C237, 238	MYLAR FILM CAPACITOR	CQMA242J50
	C239, 240	MYLAR FILM CAPACITOR	CQMA822K50
	C241, 242	ELECTR. CAPACITOR	CEAS2R2M50
	C243–246	AXIAL CERAMIC CAPACITOR	CKPUYF103Z25
	C247, 248	CERAMIC CAPACITOR	CKCYB331K50
	C249	CERAMIC CAPACITOR	CKCYB471K50
	C251, 252	ELECTR. CAPACITOR	CEAS2R2M50
	C253, 254	ELECTR. CAPACITOR	CEAS4R7M50
	C501, 502	ELECTR. CAPACITOR	CEAS2R2M50
	C503, 504	CERAMIC CAPACITOR	CKCYB102K50
	C505, 506	CERAMIC CAPACITOR	CKDYB681K50
	C520	ELECTR. CAPACITOR	CEAS101M16
	C521, 522	ELECTR. CAPACITOR	CEAS220M16
	C523, 524	CERAMIC CAPACITOR	CCCSL120K500
	C525, 526	CERAMIC CAPACITOR	CCCSL050C500
	C551–554	CERAMIC CAPACITOR	CCCSL101K500
	C561, 562	MYLAR FILM CAPACITOR	CQMA473K50
	C601	ELECTROLYTIC CAPACIT	CEAS471M6
	C602	AXIAL CERAMIC CAPACITOR	CKPUYF103Z25
	C603	ELECTR. CAPACITOR	CEAS101M16
	C605	ELECTR. CAPACITOR	CEAS4R7M50
	C621, 622	ELECTR. CAPACITOR	CEAS2R2M50
	C701, 702	ELECTROLYTIC CAPACIT	ACH1044

Mark	No.	Description	Parts No.
	C703	ELECTR. CAPACITOR	CEAS101M16
	C704	ELECTR. CAPACITOR	CEAS100M50
	C705	ELECTR. CAPACITOR	CEAS101M25
	C706	ELECTROLYTIC CAPACIT	CEHAQ470M35
	C707	CAPACITOR (0.047/5.5)	ACH1135
⚠	C708	CKA (0.01/AC400V)	ACG1002
	C709	CKA (0.01/AC250V)	ACG1005
	C710	ELECTROLYTIC CAPACIT	CEHAQ470M10
	C751	CERAMIC CAPACITOR	CKCYX104M25
	C752	ELECTROLYTIC CAPACIT	CEAS471M25
	C753	ELECTR. CAPACITOR	CEAS470M10
⚠	C754	CKA (0.01/AC400V)	ACG1002
	C755	CERAMIC CAPACITOR	CKCYX104M25

RESISTORS

Mark	No.	Description	Parts No.
	R521, 522	CARBON FILM RESISTOR	RD1/4PM432J
	R523, 524	CARBON FILM RESISTOR	RD1/4PM104J
⚠	R527, 528	CARBON FILM RESISTOR	RD1/4PMF680J
⚠	R535, 536	FUSLIBLE RESISTOR	RFA1/4PS101J
⚠	R551–554	FUSLIBLE RESISTOR	RFA1/4PS101J
	R555–558	CARBON FILM RESISTOR	RD1/4PMF101J
⚠	R561, 562	RESISTOR (0.33, 5W)	ACN1087
⚠	R563, 564	CARBON FILM RESISTOR	RD1/4PMF100J
	R565, 566	CARBON FILM RESISTOR	RD1/4PMF100J
⚠	R600	METAL OXIDE RESISTOR	RS2LMF272J
⚠	R608	METAL OXIDE RESISTOR	RS2LMF332J
	R609	CARBON FILM RESISTOR	RD1/4PM123J
	R625	CARBON FILM RESISTOR	RD1/4PMF101J
⚠	R700	METAL OXIDE RESISTOR	RS1PMF562J
	R701	CARBON FILM RESISTOR	RD1/4PM302J
⚠	R703	CARBON FILM RESISTOR	RD1/4PMF2R2J
⚠	R705	METAL OXIDE RESISTOR	RS2LMF182J
	R707	RESISTOR (2.2M, 1/2W)	ACN-208
⚠	R715	METAL OXIDE RESISTOR	RS1LMF151J
⚠	R721, 722	METAL OXIDE RESISTOR	RS2LMF822J
⚠	R723	METAL OXIDE RESISTOR	RS2LMF103J

Mark	No.	Description	Parts No.
⚠	R751	METAL OXIDE RESISTOR	RS2LMF221J
	R752	CARBON FILM RESISTOR	RD1/2PM470J
⚠	R753	CARBON FILM RESISTOR	RD1/4PMFL2R2J
		Other resistors	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Parts No.
	X101	CRYSTAL RESONATOR (456kHz)	ASS1066
	X102	CRYSTAL RESONATOR (7.2MHz)	ASS1005
		ANTENNA TERMINAL 4-P	AKA1009
		PIN JACK 6P (PHONO, CD, VCR/LD)	AKB1121
		PIN JACK 8P (TAPE1/DAT, TAPE2 MONITOR)	AKB1127
		SPEAKER TERMINAL 8-P	AKE-111
		JACK (CONTROL)	AKN-207
		AC OUTLET (1P)	AKP1054
		AM RF TUNING BLOCK	AXX1025
		2 SERIAL F.E. MODULE ASSEMBLY (This assembly has no service part.)	AXQ1002

VR ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC361	MECHANISM DRIVER IC	TA8409S
	Q361	TRANSISTOR	RN1201

COILS

Mark	No.	Description	Parts No.
	L361, 362	AXIAL INDUCTOR	LAU101K

CAPACITORS

Mark	No.	Description	Parts No.
	C361	ELECTR. CAPACITOR	CEAS470M16
	C362, 363	CERAMIC CAPACITOR	CKCYF473Z50
	C364	CERAMIC CAPACITOR	CKCYX104M25

RESISTORS

Mark	No.	Description	Parts No.
	VR361	MOTOR VR WITH LED	ACX1070
		Other resistors	RD1/8PM□□□J

TRANS ASSEMBLY

TRANS assembly has no service part.

6. ADJUSTMENTS

- For connections and points to be adjusted, refer to Fig. 6−1, Fig. 6−2 and Fig. 6−3.

6.1 AM TUNER ADJUSTMENT

- Set the BAND selector "AM".

Step No.	Adjustment Title	AM SG (400Hz 30% Mod.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (kHz)	Level (dBμV)			
1	TUNED indicator sensitivity check	1000	——	1000kHz	R117	Check that the indicator lights up when the level is less than 64dBμV/m. ＊1

＊1. Remove R117 if the indicator does not light up.

6.2 FM TUNER ADJUSTMENT

- Set the BAND selector to "FM".
- Perform VCO adjustment two minutes or more after turning the power ON.

Note :
Stereo modulation : Main 1kHz L+R ±68.25kHz dev.
Pilot 19kHz ±6.75kHz dev.

Step No.	Adjustment Title	FM SG (1kHz±75kHz dev.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (MHz)	Level (dBμV)			
1	Detector coil T-meter adjustment	98.0	60	98.0MHz	L101	Adjust so that the DC voltage between both sides of R111 is 0±50mV.
2	Separation check	98.0	60	98.0MHz	R121 ＊1	Check that the separation is 23dB or more (at 1kHz).
3	TUNED indicator sensitivity check	98.0	20±13	98.0MHz	R113 ＊2	Check that the indicator lights up.

＊1. Remove R121 if the separation is less than 23dB.
＊2. Remove R113 if the indicator does not light up.

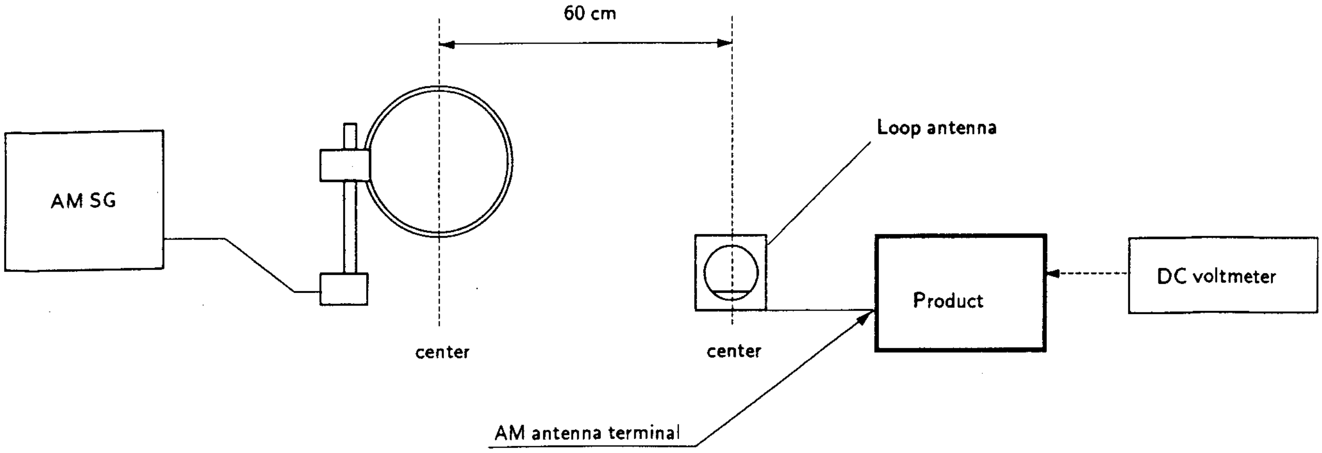


Fig. 6−1 AM Adjustment Connection Diagram

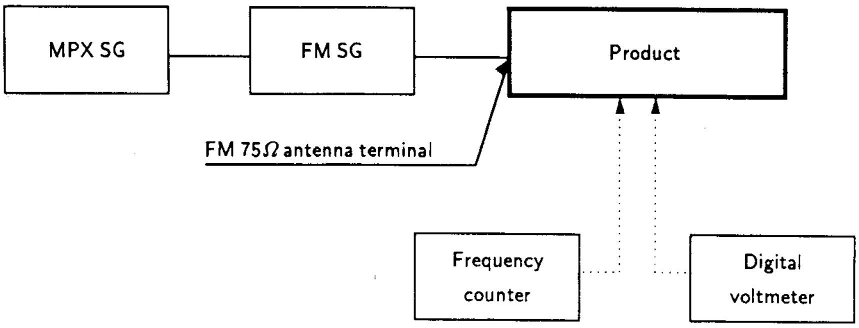

MPX SG
FM SG
Product
FM 75Ω antenna terminal
Frequency counter
Digital voltmeter

Fig. 6－2 FM Adjustment Connection Diagram

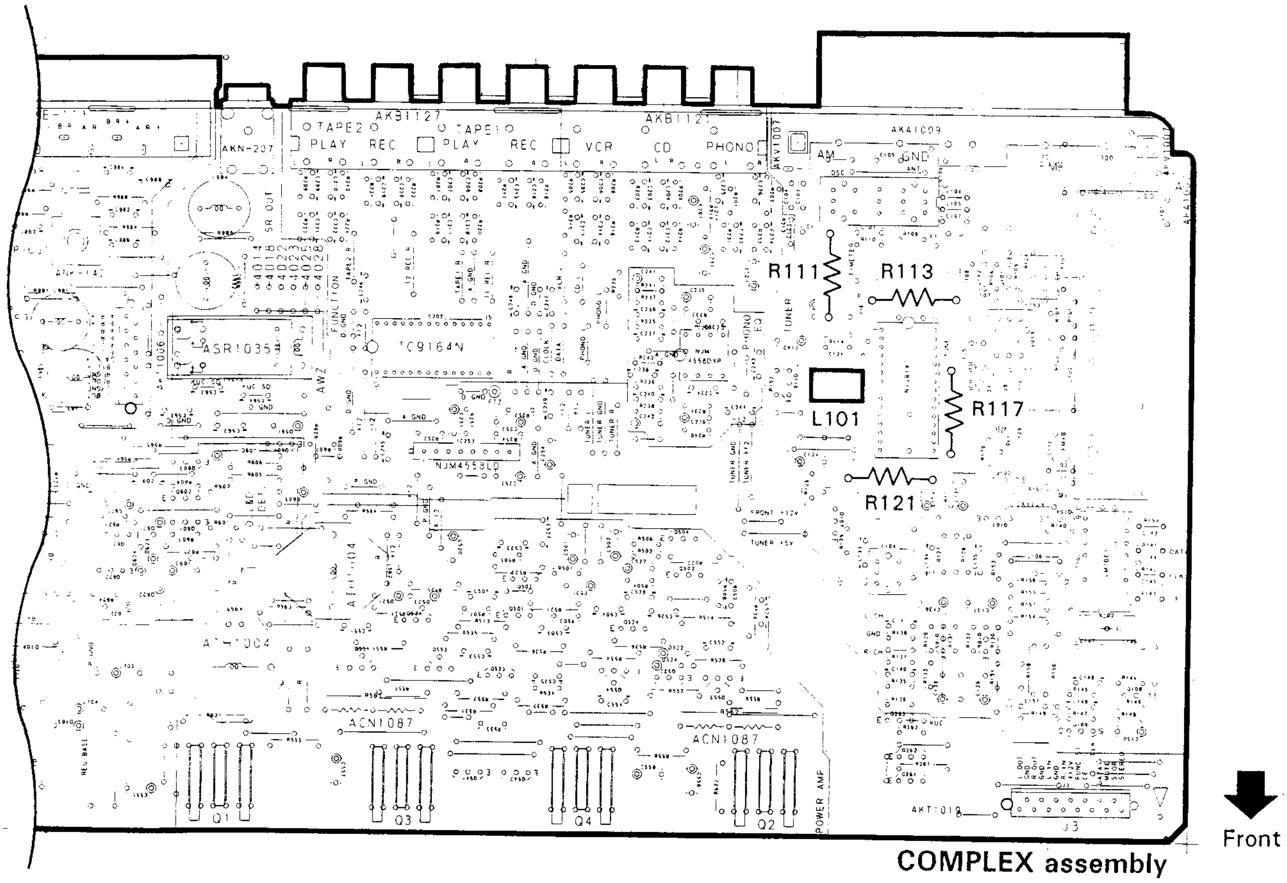

AKB1127
AKB1127
TAPE2
TAPE1
PLAY
REC
PLAY
REC
VCR
CD
PHONO
AM
GND
R111
R113
TC9164N
ASR1035
L101
R117
R121
NJM4558LD
ACN1087
ACN1087
Q1
Q3
Q4
Q2
J3
Front
COMPLEX assembly

Fig. 6－3 Adjustment Points

7. FOR SX-311R/SD, KUC/CA, SX-301/KUC, SX-251R/KUC, KUC/CA, SX-201/KUC, SD AND KUC/CA TYPES

- **KUC/CA type is identical to KUC type but with additional (French) operating instructions :**

Model Name	Operating Instructions (French)
SX-311R/KUC/CA	ARC1348
SX-251R/KUC/CA	ARC1348
SX-201/KUC/CA	ARC1348

7.1 CONTRAST OF MISCELLANEOUS PARTS

NOTES:
- *Part without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

SX-311R/SD, SX-301/KUC, SX-251R/KUC, SX-201/KUC, SD and SX-311R/KUC have the same construction except for the following :

Mark	Symbol & Description	Part No.						Remarks
		SX-311R/ KUC type	SX-311R/ SD type	SX-301/ KUC type	SX-251R/ KUC type	SX-201/ KUC type	SX-201/ SD type	
◉	COMPLEX assembly	AWZ4023	AWZ4028	AWZ4022	AWZ4018	AWZ4014	AWZ4025	
◉	CONTROL assembly	AWZ4019	AWZ4082	AWZ4015	AWZ4019	AWZ4015	AWZ4026	
	SP SWITCH assembly	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	*1
	9k/10k assembly	··············	Non supply	··············	··············	··············	Non supply	*2
	VR assembly	Non supply	Non supply	··············	Non supply	··············	··············	*3
⚠	Q1, Q2 Transistor	2SC4689	2SC4689	2SC4689	2SC4688	2SC4688	2SC4688	
⚠	Q3, Q4 Transistor	2SA1804	2SA1804	2SA1804	2SA1803	2SA1803	2SA1803	
⚠	S1 Line voltage selector (AC110V/120-127V/220V/240V)	··············	AKX-507	··············	··············	··············	AKX-507	
⚠	S2 Line voltage selector (AC110-127V/220-240V)	··············	AKX1004	··············	··············	··············	··············	
⚠	T1 Power transformer	ATS1409	ATS1411	ATS1409	ATS1408	ATS1408	ATS1410	
⚠	FU1 Fuse (4A/125V)	AEK-125	··············	AEK-125	··············	··············	··············	
⚠	FU1 Fuse (2A/125V)	··············	AEK-122	··············	··············	··············	··············	
⚠	FU1 Fuse (3.15A/125V)	··············	··············	··············	AEK-124	AEK-124	··············	
⚠	FU1 Fuse (1.6A/125V)	··············	··············	··············	··············	··············	AEK-121	
⚠	FU2 Fuse (2A/125V)	··············	AEK-122	··············	··············	··············	··············	
⚠	FU2 Fuse (1.6A/125V)	··············	··············	··············	··············	··············	AEK-121	
⚠	Fuse holder	··············	AKR1001	··············	··············	··············	AKR1001	
⚠	AC Power cord	ADG1058	ADG1051	ADG1058	ADG1058	ADG1058	ADG1051	
⚠	Strain relief	AEP-113	AEC-882	AEP-113	AEP-113	AEP-113	AEC-882	
	Display panel	AAK2277	AAK2278	AAK2276	AAK2277	AAK2276	AAK2276	
	Rotary knob assy	AAB1275	AAB1275	··············	··············	··············	··············	
	Rotary knob	··············	··············	AAB1277	AAB1277	AAB1277	AAB1277	
	Insulation spacer	··············	Non supply	··············	··············	··············	··············	

Mark	Symbol & Description	Part No.						Remarks
		SX-311R/ KUC type	SX-311R/ SD type	SX-301/ KUC type	SX-251R/ KUC type	SX-201/ KUC type	SX-201/ SD type	
	Front panel	AMB1950	AMB1950	AMB1970	AMB1969	AMB1949	AMB1949	
	Insulator assy	AMR2140	AMR2140	....	....	....	....	
	Leg assy	....	....	AEC-784	AEC-784	AEC-784	AEC-784	
	Bonnet case	ANE1334	ANE1334	ANE1334	ANE1343	ANE1343	ANE1343	
	Screw	....	BBZ26P120FMC	....	....	....	BBZ26P120FMC	Fuse holder
	Screw	....	PMZ30P040FMC	....	....	....	PMZ30P040FMC	*4
	Screw	ABA1009	ABA1009	....	....	....	....	
	Packing case	AHD2225	AHD2227	AHD2224	AHD2223	AHD2222	AHD2226	
	Remote control unit (CU-SX042)	AXD1259	AXD1259	....	AXD1259	....	....	
	Battery cover	AZA1297	AZA1297	....	AZA1297	....	....	
	Operating instructions (Spanish)	....	ARC1332	....	....	....	ARC1332	

*1 : SP SWITCH assemblies of SX-311R/KUC, SD and SX-251R/KUC types are the same.
SP SWITCH assemblies of SX-301/KUC, SX-201/KUC and SD types are the same.
*2 : 9k/10k assemblies of SX-311R/SD and SX-201/SD types are the same.
*3 : VR assemblies of SX-311R/KUC and SD types are the same.
*4 : For Channel step selector.

◉ CONTROL ASSEMBLY (AWZ4082, AWZ4015, AWZ4026)

CONTROL assembly (AWZ4082, AWZ4015, AWZ4026) and CONTROL assembly (AWZ4019) have the same construction except for the following :

Mark	Symbol & Description	Part No.				Remarks
		AWZ4019	AWZ4082	AWZ4015	AWZ4026	
	Q802	RN2201	RN2201	....	....	
	Q803	RN1201	RN1201	....	....	
	Q804	....	RN1203	....	....	
	Q805	....	2SC2458	....	....	
	D802	HSS104-02	HSS104-02	....	....	
	D821	....	AEL1108	....	....	
	S831	ASG1034	ASG1034	....	....	
	C811	CKCYX104M25	CKCYX104M25	....	....	
	C812	CKPUYF473Z16	CKPUYF473Z16	....	....	
	VR361	....	....	ACT1071	ACT1071	
	R365, R366	....	....	RD1/8PM102J	RD1/8PM102J	
	R811, R812	RD1/8PM472J	RD1/8PM472J	....	....	
	R821	....	RD1/8PM472J	....	....	
	R822	....	RD1/4PM221J	....	....	
	R823	....	RD1/8PM562J	....	....	
	Remote control sensor unit	AXX1023	AXX1023	....	....	

◉ COMPLEX ASSEMBLY (AWZ4028, AWZ4022)

COMPLEX assembly (AWZ4028, AWZ4022) and COMPLEX assembly (AWZ4023) have the same construction except for the following :

Mark	Symbol & Description	Part No.			Remarks
		AWZ4023	AWZ4028	AWZ4022	
	Q263	....	RN2203	....	
	Q751	RN1201	RN1201	....	
	D714, D751, D754	HSS104-02	HSS104-02	....	
	D752	S5566	S5566	....	
	D753	HZS6A2L	HZS6A2L	....	
	RY751	ASR1027	ASR1027	....	
	T751	ATT1011	ATT1015	....	
	C100	....	CCDSL101J50	....	
⚠	C708 (0.01/AC400V)	ACG1002	....	ACG1002	
⚠	C708 (0.022/AC400V)	....	ACG1030	....	
	C751, C755	CKCYX104M25	CKCYX104M25	....	
	C752	CEAS471M25	CEAS471M25	....	
	C753	CEAS470M10	CEAS470M10	....	
⚠	C754 (0.01/AC400V)	ACG1002	ACG1002	....	
	R707 (2.2M, 1/2W)	ACN-208	....	ACN-208	
⚠	R751	RS2LMF221J	RS2LMF221J	....	
	R752	RD1/2PM470J	RD1/2PM470J	....	
	Mini jack (CONTROL)	AKN-207	AKN-207	....	

VR ASSEMBLY (SX-251R/KUC)

VR assembly (SX-251R/KUC) and VR assembly (SX-311R/KUC) have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		SX-311R/KUC	SX-251R/KUC	
	Q361	RN1201	....	
	C364	CKCYX104M25	....	
	VR361	ACX1070	ACX1069	
	R363	RD1/8PM182J	....	

SP SWITCH ASSEMBLY (SX – 301/KUC, SX – 201/KUC and SX – 201/SD)

SP SWITCH assembly (SX – 301/KUC, SX – 201/KUC, SD) and SP SWITCH assembly (SX – 311R/KUC) have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		SX – 311R/KUC	SX – 301/KUC, SX – 201/KUC, SD	
	S1	....	ASG1035	
⚠	C571 (0.01/AC400V)	....	ACG1002	

7.2 PCB PARTS LIST

NOTES:

- *Part without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω 56×10^1 561..........................RD1/8PM $\boxed{5}\ \boxed{6}\ \boxed{1}$ J
47kΩ 47×10^3 473..........................RD1/4PS $\boxed{4}\ \boxed{7}\ \boxed{3}$ J
0.5Ω 0R5..RN2H $\boxed{0}\ \boxed{R}\ \boxed{5}$ K
1Ω 010..RS1P $\boxed{0}\ \boxed{1}\ \boxed{0}$ K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562×10^1 5621........................RN1/4SR $\boxed{5}\ \boxed{6}\ \boxed{2}\ \boxed{1}$ F

◉ COMPLEX ASSEMBLY (AWZ4018 : SX – 251R/KUC)

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC101	AM/FM IC	LA1851N
	IC102	PLL IC	LM7001
	IC201	OP-AMP IC	NJM4558DXP
	IC202	E-SW IC	TC9164N
	IC253	OP-AMP IC	NJM4558LD
	Q101	TRANSISTOR	2SC2668
	Q102	TRANSISTOR	RN2203
	Q103	TRANSISTOR	RN1203
	Q104	TRANSISTOR	RN2201
	Q108	TRANSISTOR	2SC1740SLN
	Q109	N-FET	2SK246
	Q110	TRANSISTOR	2SC1740S
	Q261, 262	TRANSISTOR	RN1203
	Q501–504	TRANSISTOR	2SA992
	Q521, 522	TRANSISTOR	2SA1145
	Q523, 524	TRANSISTOR	2SC2705
	Q541, 542	TRANSISTOR	2SC2458
	Q551, 552	TRANSISTOR	2SC2235
	Q553, 554	TRANSISTOR	2SA965
	Q601, 602	TRANSISTOR	2SC2458
	Q603	TRANSISTOR	2SA1048
	Q604	TRANSISTOR	2SC2240
	Q605	TRANSISTOR	RN1203
	Q606	TRANSISTOR	RN1201
	Q751	TRANSISTOR	RN1201
	D521–524	DIODE	HSS104-02
	D561	DIODE	HSS104-02
	D601	ZENER DIODE	HZS12AL
	D700	DIODE	HSS104-02
	D701	DIODE	D3SBA20 (A)
	D703	ZENER DIODE	HZS12B2L
	D704	ZENER DIODE	HZS12AL
	D705	ZENER DIODE	HZS24-2L
	D706	ZENER DIODE	HZS6B2L
	D708–710	DIODE	HSS104-02
	D711	ZENER DIODE	HZS7B2L
	D712	ZENER DIODE	HZS6B2L
	D713, 714	DIODE	HSS104-02
	D751	DIODE	HSS104-02
	D752	DIODE	S5566
	D753	ZENER DIODE	HZS6A2L
	D754	DIODE	HSS104-02

RELAY

Mark	No.	Description	Parts No.
	RY561	RELAY	ASR1035
	RY751	RELAY	ASR1027

COILS & TRANSFORMER

Mark	No.	Description	Parts No.
	F101, 102	CERAMIC FILTER	ATF-126
	F103	CERAMIC FILTER	ATF-208
	L101	COIL	ATE1012
	L106	AXIAL INDUCTOR	LAU2R2M
	L561, 562	COIL	ATH1004
	T751	POWER TRANSFORMER	ATT1011

CAPACITORS

Mark	No.	Description	Parts No.
	C101, 103	CERAMIC CAPACITOR	CKPUYY103N16
	C105	AXIAL CERAMIC CAPACITOR	CKPUYF473Z16
	C106	AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C107	AXIAL CERAMIC C.	CCPUCH150J50
	C108	AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C109	ELECTR. CAPACITOR	CEAS100M50
	C110	CERAMIC CAPACITOR	CKPUYY103N16
	C112, 113	CERAMIC CAPACITOR	CKPUYY103N16
	C115	CERAMIC CAPACITOR	CKDYX473M25
	C116	CERAMIC CAPACITOR	CKPUYB102K50
	C117	ELECTR. CAPACITOR	CEAS3R3M50
	C118	CERAMIC CAPACITOR	CKPUYY103N16
	C119	ELECTR. CAPACITOR	CEAS470M16
	C120	CERAMIC CAPACITOR	CKPUYX562M16
	C121	CERAMIC CAPACITOR	CKPUYY103N16
	C122	AXIAL CERAMIC C.	CCPUSL470J50
	C123	ELECTR. CAPACITOR	CEAS010M50
	C125	ELECTR. CAPACITOR	CEAS4R7M50
	C126	ELECTR. CAPACITOR	CEAS100M50
	C128, 129	CERAMIC CAPACITOR	CKPUYY103N16
	C130, 131	ELECTR. CAPACITOR	CEAS010M50
	C132	ELECTR. CAPACITOR	CEASR33M50
	C134, 135	CERAMIC CAPACITOR	CKCYB103K50
	C136, 137	ELECTR. CAPACITOR	CEAS4R7M50
	C142	ELECTR. CAPACITOR	CEAS470M16
	C145	CERAMIC CAPACITOR	CKPUYB221K50
	C146, 147	AXIAL CERAMIC C.	CCPUCH150J50
	C148	AUDIO FILM CAPACITOR	CFTXA224J50
	C149	AUDIO FILM CAPACITOR	CFTXA103J50
	C150	ELECTR. CAPACITOR	CEAS330M16
	C151	AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C152	CERAMIC CAPACITOR	CKPUYY103N16
	C201	ELECTR. CAPACITOR	CEAS010M50
	C231, 232	ELECTR. CAPACITOR	CEAS100M50
	C233, 234	CERAMIC CAPACITOR	CCCSL221J50
	C235, 236	ELECTR. CAPACITOR	CEAS470M10
	C237, 238	MYLAR FILM CAPACITOR	CQMA242J50
	C239, 240	MYLAR FILM CAPACITOR	CQMA822K50
	C241, 242	ELECTR. CAPACITOR	CEAS2R2M50
	C243–246	AXIAL CERAMIC CAPACITOR	CKPUYF103Z25
	C247, 248	CERAMIC CAPACITOR	CKCYB331K50
	C249	CERAMIC CAPACITOR	CKCYB471K50
	C251, 252	ELECTR. CAPACITOR	CEAS2R2M50
	C253, 254	ELECTR. CAPACITOR	CEAS4R7M50
	C501, 502	ELECTR. CAPACITOR	CEAS2R2M50
	C503, 504	CERAMIC CAPACITOR	CKCYB102K50
	C505, 506	CERAMIC CAPACITOR	CKDYB681K50
	C520	ELECTR. CAPACITOR	CEAS101M16
	C521, 522	ELECTR. CAPACITOR	CEAS220M16
	C523, 524	CERAMIC CAPACITOR	CCCSL120K500
	C525, 526	CERAMIC CAPACITOR	CCCSL050C500
	C551–554	CERAMIC CAPACITOR	CCCSL101K500
	C561, 562	MYLAR FILM CAPACITOR	CQMA473K50
	C601	ELECTROLYTIC CAPACIT	CEAS471M6
	C602	AXIAL CERAMIC CAPACITOR	CKPUYF103Z25
	C603	ELECTR. CAPACITOR	CEAS101M16
	C605	ELECTR. CAPACITOR	CEAS4R7M50
	C701, 702	ELECTROLYTIC CAPACIT	ACH1145
	C703	ELECTR. CAPACITOR	CEAS101M16
	C704	ELECTR. CAPACITOR	CEAS100M50
	C705	ELECTR. CAPACITOR	CEAS101M25
	C706	ELECTROLYTIC CAPACIT	CEHAQ470M35
	C707	CAPACITOR (0.047/5.5)	ACH1135
⚠	C708	CKA (0.01/AC400V)	ACG1002
	C709	CKA (0.01/AC250V)	ACG1005
	C710	ELECTROLYTIC CAPACIT	CEHAQ470M10
	C751	CERAMIC CAPACITOR	CKCYX104M25
	C752	ELECTROLYTIC CAPACIT	CEAS471M25
	C753	ELECTR. CAPACITOR	CEAS470M10
⚠	C754	CKA (0.01/AC400V)	ACG1002
	C755	CERAMIC CAPACITOR	CKCYX104M25

RESISTORS

Mark	No.	Description	Parts No.
	R521, 522	CARBON FILM RESISTOR	RD1/4PM562J
	R523, 524	CARBON FILM RESISTOR	RD1/4PM104J
⚠	R527, 528	CARBON FILM RESISTOR	RD1/4PMF680J
⚠	R535, 536	FUSLIBLE RESISTOR	RFA1/4PS101J
⚠	R551–554	FUSLIBLE RESISTOR	RFA1/4PS101J
	R555–558	CARBON FILM RESISTOR	RD1/4PMF101J
⚠	R561, 562	RESISTOR (0.33, 5W)	ACN1087

Mark	No.	Description	Parts No.
⚠	R563, 564	CARBON FILM RESISTOR	RD1/4PMF100J
	R565, 566	CARBON FILM RESISTOR	RD1/4PMF100J
⚠	R608	METAL OXIDE RESISTOR	RS2LMF911J
	R609	CARBON FILM RESISTOR	RD1/4PM123J
⚠	R700	METAL OXIDE RESISTOR	RS1PMF562J
	R701	CARBON FILM RESISTOR	RD1/4PM302J
⚠	R703	CARBON FILM RESISTOR	RD1/4PMF2R2J
⚠	R705	METAL OXIDE RESISTOR	RS2LMF122J
	R707	RESISTOR (2.2M, 1/2W)	ACN-208
⚠	R715	METAL OXIDE RESISTOR	RS1LMF151J
⚠	R721-723	METAL OXIDE RESISTOR	RS2LMF682J
⚠	R751	METAL OXIDE RESISTOR	RS2LMF221J
	R752	CARBON FILM RESISTOR	RD1/2PM470J
⚠	R753	CARBON FILM RESISTOR	RD1/4PMFL2R2J
		Other resistors	RD1/8PM□□□J
OTHERS			
	X101	CRYSTAL RESONATOR (456kHz)	ASS1066
	X102	CRYSTAL RESONATOR (7.2MHz)	ASS1005
		ANTENNA TERMINAL 4-P	AKA1009
		PIN JACK 6P (PHONO, CD, VCR/LD)	AKB1121
		PIN JACK 8P (TAPE1/DAT, TAPE2 MONITOR)	AKB1127
		SPEAKER TERMINAL 8-P	AKE-111
		JACK (CONTROL)	AKN-207
		AC OUTLET (1P)	AKP1054
		AM RF TUNING BLOCK	AXX1025
		2 SERIAL F.E. MODULE ASSEMBLY (This assembly has no service part.)	AXQ1002

◉ COMPLEX ASSEMBLY (AWZ4014 : SX-201/KUC)

Mark	No.	Description	Parts No.
SEMICONDUCTORS			
	IC101	AM/FM IC	LA1851N
	IC102	PLL IC	LM7001
	IC201	OP-AMP IC	NJM4558DXP
	IC202	E-SW IC	TC9164N
	IC253	OP-AMP IC	NJM4558LD
	Q101	TRANSISTOR	2SC2668
	Q102	TRANSISTOR	RN2203
	Q103	TRANSISTOR	RN1203
	Q104	TRANSISTOR	RN2201
	Q108	TRANSISTOR	2SC1740SLN
	Q109	N-FET	2SK246
	Q110	TRANSISTOR	2SC1740S
	Q261, 262	TRANSISTOR	RN1203
	Q501-504	TRANSISTOR	2SA992
	Q521, 522	TRANSISTOR	2SA1145
	Q523, 524	TRANSISTOR	2SC2705
	Q541, 542	TRANSISTOR	2SC2458
	Q551, 552	TRANSISTOR	2SC2235
	Q553, 554	TRANSISTOR	2SA965
	Q601, 602	TRANSISTOR	2SC2458
	Q603	TRANSISTOR	2SA1048
	Q604	TRANSISTOR	2SC2240
	Q605	TRANSISTOR	RN1203
	Q606	TRANSISTOR	RN1201
	D521-524	DIODE	HSS104-02
	D561	DIODE	HSS104-02
	D601	ZENER DIODE	HZS12AL
	D700	DIODE	HSS104-02
	D701	DIODE	D3SBA20 (A)
	D703	ZENER DIODE	HZS12B2L
	D704	ZENER DIODE	HZS12AL
	D705	ZENER DIODE	HZS24-2L
	D706	ZENER DIODE	HZS6B2L
	D708-710	DIODE	HSS104-02
	D711	ZENER DIODE	HZS7B2L
	D712	ZENER DIODE	HZS6B2L
	D713	DIODE	HSS104-02
RELAY			
	RY561	RELAY	ASR1035
COILS			
	F101, 102	CERAMIC FILTER	ATF-126
	F103	CERAMIC FILTER	ATF-208
	L101	COIL	ATE1012
	L106	AXIAL INDUCTOR	LAU2R2M
	L561, 562	COIL	ATH1004
CAPACITORS			
	C101, 103	CERAMIC CAPACITOR	CKPUYY103N16
	C105	AXIAL CERAMIC CAPACITOR	CKPUYF473Z16

Mark	No.	Description	Parts No.
	C106	AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C107	AXIAL CERAMIC C.	CCPUCH150J50
	C108	AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C109	ELECTR. CAPACITOR	CEAS100M50
	C110	CERAMIC CAPACITOR	CKPUYY103N16
	C112, 113	CERAMIC CAPACITOR	CKPUYY103N16
	C115	CERAMIC CAPACITOR	CKDYX473M25
	C116	CERAMIC CAPACITOR	CKPUYB102K50
	C117	ELECTR. CAPACITOR	CEAS3R3M50
	C118	CERAMIC CAPACITOR	CKPUYY103N16
	C119	ELECTR. CAPACITOR	CEAS470M16
	C120	CERAMIC CAPACITOR	CKPUYX562M16
	C121	CERAMIC CAPACITOR	CKPUYY103N16
	C122	AXIAL CERAMIC C.	CCPUSL470J50
	C123	ELECTR. CAPACITOR	CEAS010M50
	C125	ELECTR. CAPACITOR	CEAS4R7M50
	C126	ELECTR. CAPACITOR	CEAS100M50
	C128, 129	CERAMIC CAPACITOR	CKPUYY103N16
	C130, 131	ELECTR. CAPACITOR	CEAS010M50
	C132	ELECTR. CAPACITOR	CEASR33M50
	C134, 135	CERAMIC CAPACITOR	CKCYB103K50
	C136, 137	ELECTR. CAPACITOR	CEAS4R7M50
	C142	ELECTR. CAPACITOR	CEAS470M16
	C145	CERAMIC CAPACITOR	CKPUYB221K50
	C146, 147	AXIAL CERAMIC C.	CCPUCH150J50
	C148	AUDIO FILM CAPACITOR	CFTXA224J50
	C149	AUDIO FILM CAPACITOR	CFTXA103J50
	C150	ELECTR. CAPACITOR	CEAS330M16
	C151	AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C152	CERAMIC CAPACITOR	CKPUYY103N16
	C201	ELECTR. CAPACITOR	CEAS010M50
	C231, 232	ELECTR. CAPACITOR	CEAS100M50
	C233, 234	CERAMIC CAPACITOR	CCCSL221J50
	C235, 236	ELECTR. CAPACITOR	CEAS470M10
	C237, 238	MYLAR FILM CAPACITOR	CQMA242J50
	C239, 240	MYLAR FILM CAPACITOR	CQMA822K50
	C241, 242	ELECTR. CAPACITOR	CEAS2R2M50
	C243−246	AXIAL CERAMIC CAPACITOR	CKPUYF103Z25
	C247, 248	CERAMIC CAPACITOR	CKCYB331K50
	C249	CERAMIC CAPACITOR	CKCYB471K50
	C251, 252	ELECTR. CAPACITOR	CEAS2R2M50
	C253, 254	ELECTR. CAPACITOR	CEAS4R7M50
	C501, 502	ELECTR. CAPACITOR	CEAS2R2M50
	C503, 504	CERAMIC CAPACITOR	CKCYB102K50
	C505, 506	CERAMIC CAPACITOR	CKDYB681K50
	C520	ELECTR. CAPACITOR	CEAS101M16
	C521, 522	ELECTR. CAPACITOR	CEAS220M16

Mark	No.	Description	Parts No.
	C523, 524	CERAMIC CAPACITOR	CCCSL120K500
	C525, 526	CERAMIC CAPACITOR	CCCSL050C500
	C551−554	CERAMIC CAPACITOR	CCCSL101K500
	C561, 562	MYLAR FILM CAPACITOR	CQMA473K50
	C601	ELECTROLYTIC CAPACIT	CEAS471M6
	C602	AXIAL CERAMIC CAPACITOR	CKPUYF103Z25
	C603	ELECTR. CAPACITOR	CEAS101M16
	C605	ELECTR. CAPACITOR	CEAS4R7M50
	C701, 702	ELECTROLYTIC CAPACIT	ACH1145
	C703	ELECTR. CAPACITOR	CEAS101M16
	C704	ELECTR. CAPACITOR	CEAS100M50
	C705	ELECTR. CAPACITOR	CEAS101M25
	C706	ELECTROLYTIC CAPACIT	CEHAQ470M35
	C707	CAPACITOR (0.047/5.5)	ACH1135
⚠	C708	CKA (0.01/AC400V)	ACG1002
	C709	CKA (0.01/AC250V)	ACG1005
	C710	ELECTROLYTIC CAPACIT	CEHAQ470M10

RESISTORS

Mark	No.	Description	Parts No.
	R521, 522	CARBON FILM RESISTOR	RD1/4PM562J
	R523, 524	CARBON FILM RESISTOR	RD1/4PM104J
⚠	R527, 528	CARBON FILM RESISTOR	RD1/4PMF680J
⚠	R535, 536	FUSLIBLE RESISTOR	RFA1/4PS101J
⚠	R551−554	FUSLIBLE RESISTOR	RFA1/4PS101J
	R555−558	CARBON FILM RESISTOR	RD1/4PMF101J
⚠	R561, 562	RESISTOR (0.33, 5W)	ACN1087
⚠	R563, 564	CARBON FILM RESISTOR	RD1/4PMF100J
	R565, 566	CARBON FILM RESISTOR	RD1/4PMF100J
⚠	R608	METAL OXIDE RESISTOR	RS2LMF911J
	R609	CARBON FILM RESISTOR	RD1/4PM123J
⚠	R700	METAL OXIDE RESISTOR	RS1PMF562J
	R701	CARBON FILM RESISTOR	RD1/4PM302J
⚠	R703	CARBON FILM RESISTOR	RD1/4PMF2R2J
⚠	R705	METAL OXIDE RESISTOR	RS2LMF122J
	R707	RESISTOR (2.2M, 1/2W)	ACN−208
⚠	R715	METAL OXIDE RESISTOR	RS1LMF151J
⚠	R721−723	METAL OXIDE RESISTOR	RS2LMF682J

Mark	No.	Description	Parts No.
⚠	R753	CARBON FILM RESISTOR	RD1/4PMFL2R2J
		Other resistors	RD1/8PM□□□J
OTHERS			
	X101	CRYSTAL RESONATOR (456kHz)	ASS1066
	X102	CRYSTAL RESONATOR (7.2MHz)	ASS1005
		ANTENNA TERMINAL 4−P	AKA1009
		PIN JACK 6P (PHONO, CD, VCR/LD)	AKB1121
		PIN JACK 8P (TAPE1/DAT, TAPE2 MONITOR)	AKB1127
		SPEAKER TERMINAL 8−P	AKE−111
		AC OUTLET (1P)	AKP1054
		AM RF TUNING BLOCK	AXX1025
		2 SERIAL F.E. MODULE ASSEMBLY (This assembly has no service part.)	AXQ1002

◉ COMPLEX ASSEMBLY (AWZ4025 : SX−201/SD)

Mark	No.	Description	Parts No.
SEMICONDUCTORS			
	IC101	AM/FM IC	LA1851N
	IC102	PLL IC	LM7001
	IC201	OP−AMP IC	NJM4558DXP
	IC202	E−SW IC	TC9164N
	IC253	OP−AMP IC	NJM4558LD
	Q101	TRANSISTOR	2SC2668
	Q102	TRANSISTOR	RN2203
	Q103	TRANSISTOR	RN1203
	Q104	TRANSISTOR	RN2201
	Q108	TRANSISTOR	2SC1740SLN
	Q109	N−FET	2SK246
	Q110	TRANSISTOR	2SC1740S
	Q261, 262	TRANSISTOR	RN1203
	Q263	TRANSISTOR	RN2203
	Q501−504	TRANSISTOR	2SA992
	Q521, 522	TRANSISTOR	2SA1145
	Q523, 524	TRANSISTOR	2SC2705
	Q541, 542	TRANSISTOR	2SC2458
	Q551, 552	TRANSISTOR	2SC2235
	Q553, 554	TRANSISTOR	2SA965
	Q601, 602	TRANSISTOR	2SC2458
	Q603	TRANSISTOR	2SA1048
	Q604	TRANSISTOR	2SC2240
	Q605	TRANSISTOR	RN1203
	Q606	TRANSISTOR	RN1201
	D521−524	DIODE	HSS104−02
	D561	DIODE	HSS104−02
	D601	ZENER DIODE	HZS12AL

Mark	No.	Description	Parts No.
	D700	DIODE	HSS104−02
	D701	DIODE	D3SBA20 (A)
	D703	ZENER DIODE	HZS12B2L
	D704	ZENER DIODE	HZS12AL
	D705	ZENER DIODE	HZS24−2L
	D706	ZENER DIODE	HZS6B2L
	D708−710	DIODE	HSS104−02
	D711	ZENER DIODE	HZS7B2L
	D712	ZENER DIODE	HZS6B2L
	D713	DIODE	HSS104−02
RELAY			
	RY561	RELAY	ASR1035
COILS			
	F101, 102	CERAMIC FILTER	ATF−126
	F103	CERAMIC FILTER	ATF−208
	L101	COIL	ATE1012
	L106	AXIAL INDUCTOR	LAU2R2M
	L561, 562	COIL	ATH1004
CAPACITORS			
	C100	CERAMIC CAPACITOR	CCDSL101J50
	C101, 103	CERAMIC CAPACITOR	CKPUYY103N16
	C105	AXIAL CERAMIC CAPACITOR	CKPUYF473Z16
	C106	AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C107	AXIAL CERAMIC C.	CCPUCH150J50
	C108	AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C109	ELECTR. CAPACITOR	CEAS100M50
	C110	CERAMIC CAPACITOR	CKPUYY103N16
	C112, 113	CERAMIC CAPACITOR	CKPUYY103N16
	C115	CERAMIC CAPACITOR	CKDYX473M25
	C116	CERAMIC CAPACITOR	CKPUYB102K50
	C117	ELECTR. CAPACITOR	CEAS3R3M50
	C118	CERAMIC CAPACITOR	CKPUYY103N16
	C119	ELECTR. CAPACITOR	CEAS470M16
	C120	CERAMIC CAPACITOR	CKPUYX562M16
	C121	CERAMIC CAPACITOR	CKPUYY103N16
	C122	AXIAL CERAMIC C.	CCPUSL470J50
	C123	ELECTR. CAPACITOR	CEAS010M50
	C125	ELECTR. CAPACITOR	CEAS4R7M50
	C126	ELECTR. CAPACITOR	CEAS100M50
	C128, 129	CERAMIC CAPACITOR	CKPUYY103N16
	C130, 131	ELECTR. CAPACITOR	CEAS010M50
	C132	ELECTR. CAPACITOR	CEASR33M50
	C134, 135	CERAMIC CAPACITOR	CKCYB103K50
	C136, 137	ELECTR. CAPACITOR	CEAS4R7M50
	C142	ELECTR. CAPACITOR	CEAS470M16
	C145	CERAMIC CAPACITOR	CKPUYB221K50
	C146, 147	AXIAL CERAMIC C.	CCPUCH150J50
	C148	AUDIO FILM CAPACITOR	CFTXA224J50

Mark	No.	Description	Parts No.
	C149	AUDIO FILM CAPACITOR	CFTXA103J50
	C150	ELECTR. CAPACITOR	CEAS330M16
	C151	AXIAL CERAMIC CAPACITOR	CKPUYF223Z25
	C152	CERAMIC CAPACITOR	CKPUYY103N16
	C201	ELECTR. CAPACITOR	CEAS010M50
	C231, 232	ELECTR. CAPACITOR	CEAS100M50
	C233, 234	CERAMIC CAPACITOR	CCCSL221J50
	C235, 236	ELECTR. CAPACITOR	CEAS470M10
	C237, 238	MYLAR FILM CAPACITOR	CQMA242J50
	C239, 240	MYLAR FILM CAPACITOR	CQMA822K50
	C241, 242	ELECTR. CAPACITOR	CEAS2R2M50
	C243−246	AXIAL CERAMIC CAPACITOR	CKPUYF103Z25
	C247, 248	CERAMIC CAPACITOR	CKCYB331K50
	C249	CERAMIC CAPACITOR	CKCYB471K50
	C251, 252	ELECTR. CAPACITOR	CEAS2R2M50
	C253, 254	ELECTR. CAPACITOR	CEAS4R7M50
	C501, 502	ELECTR. CAPACITOR	CEAS2R2M50
	C503, 504	CERAMIC CAPACITOR	CKCYB102K50
	C505, 506	CERAMIC CAPACITOR	CKDYB681K50
	C520	ELECTR. CAPACITOR	CEAS101M16
	C521, 522	ELECTR. CAPACITOR	CEAS220M16
	C523, 524	CERAMIC CAPACITOR	CCCSL120K500
	C525, 526	CERAMIC CAPACITOR	CCCSL050C500
	C551−554	CERAMIC CAPACITOR	CCCSL101K500
	C561, 562	MYLAR FILM CAPACITOR	CQMA473K50
	C601	ELECTROLYTIC CAPACIT	CEAS471M6
	C602	AXIAL CERAMIC CAPACITOR	CKPUYF103Z25
	C603	ELECTR. CAPACITOR	CEAS101M16
	C605	ELECTR. CAPACITOR	CEAS4R7M50
	C701, 702	ELECTROLYTIC CAPACIT	ACH1145
	C703	ELECTR. CAPACITOR	CEAS101M16
	C704	ELECTR. CAPACITOR	CEAS100M50
	C705	ELECTR. CAPACITOR	CEAS101M25
	C706	ELECTROLYTIC CAPACIT	CEHAQ470M35
	C707	CAPACITOR (0.047/5.5)	ACH1135
⚠	C708	CKA (0.01/AC400V)	ACG1002
	C709	CKA (0.01/AC250V)	ACG1005
	C710	ELECTROLYTIC CAPACIT	CEHAQ470M10

RESISTORS

Mark	No.	Description	Parts No.
	R521, 522	CARBON FILM RESISTOR	RD1/4PM562J
	R523, 524	CARBON FILM RESISTOR	RD1/4PM104J
⚠	R527, 528	CARBON FILM RESISTOR	RD1/4PMF680J
⚠	R535, 536	FUSLIBLE RESISTOR	RFA1/4PS101J
⚠	R551−554	FUSLIBLE RESISTOR	RFA1/4PS101J
	R555−558	CARBON FILM RESISTOR	RD1/4PMF101J
⚠	R561, 562	RESISTOR (0.33, 5W)	ACN1087
⚠	R563, 564	CARBON FILM RESISTOR	RD1/4PMF100J
	R565, 566	CARBON FILM RESISTOR	RD1/4PMF100J
⚠	R608	METAL OXIDE RESISTOR	RS2LMF911J
	R609	CARBON FILM RESISTOR	RD1/4PM123J
⚠	R700	METAL OXIDE RESISTOR	RS1PMF562J
	R701	CARBON FILM RESISTOR	RD1/4PM302J
⚠	R703	CARBON FILM RESISTOR	RD1/4PMF2R2J
⚠	R705	METAL OXIDE RESISTOR	RS2LMF122J
⚠	R715	METAL OXIDE RESISTOR	RS1LMF151J
⚠	R721−723	METAL OXIDE RESISTOR	RS2LMF682J
⚠	R753	CARBON FILM RESISTOR	RD1/4PMFL2R2J
		Other resistors	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Parts No.
	X101	CRYSTAL RESONATOR (456kHz)	ASS1066
	X102	CRYSTAL RESONATOR (7.2MHz)	ASS1005
		ANTENNA TERMINAL 4−P	AKA1009
		PIN JACK 6P (PHONO, CD, VCR/LD)	AKB1121
		PIN JACK 8P (TAPE1/DAT, TAPE2 MONITOR)	AKB1127
		SPEAKER TERMINAL 8−P	AKE−111
		AC OUTLET (1P)	AKP1054
		AM RF TUNING BLOCK	AXX1025
		2 SERIAL F.E. MODULE ASSEMBLY (This assembly has no service part.)	AXQ1002

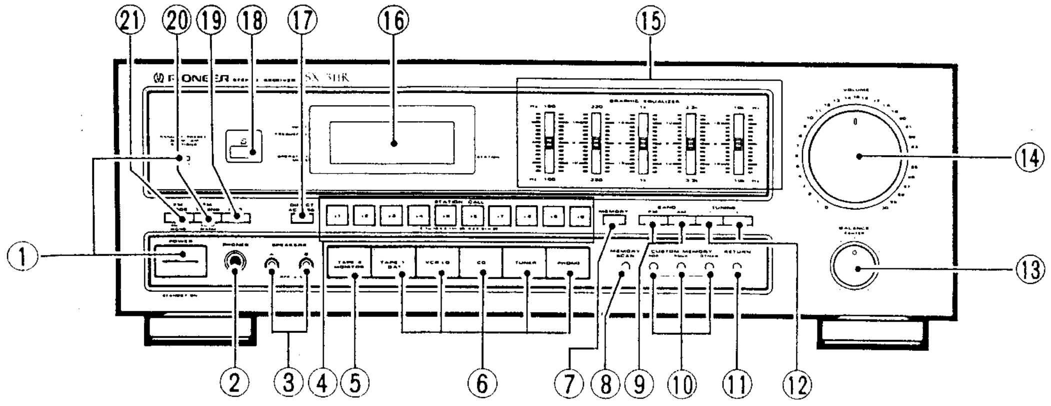
9k/10k ASSEMBLY (SX−311R/SD, SX−201/SD)

SWITCH

Mark	No.	Description	Parts No.
	S999	SWITCH	ASH−028

8. PANEL FACILITIES

- The illustration shows SX-311R multi-voltage model.



① POWER (STANDBY/ON) switch (SX-311R, SX-251R) STANDBY indicator (SX-311R multi-voltage model only)

This is the switch for electric power.

ON: When set to the ON position, power is supplied and the unit becomes operational.

STANDBY: When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain opetation readiness.

- The accessory remote control unit can also be used to operate STANDBY/ON.

[For SX-311R multi-voltage model]

Even when the power is in STANDBY, the STANDBY indicator remains lit.

NOTE:

When the power is initially turned ON, muting will be applied to prevent sound from being output for approx. 5 seconds.

① POWER (■ OFF, ▬ ON) switch (SX-301, SX-201)

When this switch is pressed, power is supplied to the unit.
Press the switch again to turn power OFF.
[Timer ON/OFF possible]
When the unit is switched ON, ON/OFF control can be performed by means of the optional timer.

NOTE:

When the power is initially turned ON, muting will be applied to prevent sound from being output for about 5 seconds.

② PHONES jack

Connect the plug on your headphones to this jack. To listen to a program through the headphones, set both SPEAKERS A and B switches to the OFF position.

③ SPEAKERS (■ OFF, ▬ ON) buttons

These are used to select the speaker through which you wish to listen.

A: When the speakers connected to A terminals are in use.
B: When the speakers connected to B terminals are in use.

- Turn both A and B speakers to OFF position when only the headphones are in use.

NOTE:

No sound will be heard through the speakers when both A and B buttons are depressed if only one set o speakers has been connected to either A or B SPEAKERS terminals.

④ STATION CALL buttons

These buttons are used to preset and recall desired broadcasting stations.

⑤ TAPE 2 MONITOR button

Press when listening to tape playback with the cassette deck 2.

⑥ Function buttons

Use to select playback source.

[TAPE 1/DAT] – Press when listening to tape playback with the cassette deck 1 or digital audio tape deck.
[VCR/LD] – Press when listening to programs from a component connected to the VCR/LD terminals.
[CD] – Press when listening to compact disc playback with a CD player.
[TUNER] – Press when listening to AM or FM broadcasts with a tuner.
[PHONO] – Press when listening to record playback on a turntable.

⑦ MEMORY button

When the unit is in the frequency display mode, pressing this button will result in the memorization of the current broadcast band, reception frequency, and FM AUTO/MONO mode.
This button is also used to input custom memory names.

⑧ MEMORY SCAN button

This button is used for both station memory scan and custom memory scan.

⑨ BAND Selector buttons

These buttons are used to select either AM or FM reception.

⑩ CUSTOM MEMORY buttons

Stations can be assigned to STATION CALL buttons according to the genre of material broadcast (POP, ROCK, OTHER). You can recall a particular genre, and scan all the stations of that genre with Memory Scan until you reach the desired one.

⑪ RETURN button

This is helpful during troubleshooting or when no sound is output. Pressing this button returns the receiver to the following settings, the sound level being controlled by VOLUME control.

- TAPE 2 MONITOR OFF
- FUNCTION TUNER
- BAND FM*

* The last FM broadcast you were listening to will be received. When reception is not possible, search begins for frequency that can be received.

NOTE:
If no sound is output after the RETURN button is pressed, make sure that SPEAKERS switches are turned on.

⑫ TUNING buttons (−, +)

+: The FM or AM band is scanned in the direction of increasing frequency.
−: The opposite operation to that of the UP button takes place.

⑬ BALANCE control

Should normally be left in the center position. Adjust balance if the sound is louder from one of the speakers. If the rights side is louder, turn toward the L position and if the left side is louder, turn toward the R position.

⑭ VOLUME control

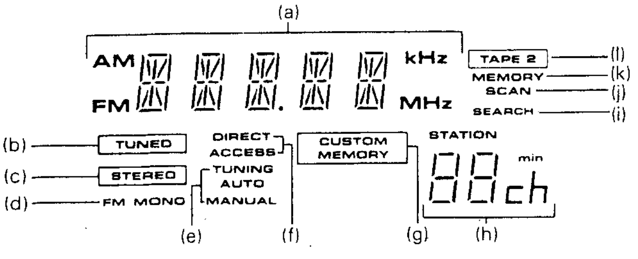
Use to adjust volume level.

⑮ GRAPHIC EQUALIZER controls

The equalizer is divided into five frequency ranges (100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz) to tailor music to the individual taste of the listener.

⑯ OPERATION DISPLAY panel

(a) Indicates the function or frequency by the function switches.
(b) TUNED indicator
(c) FM STEREO indicator
(d) FM MONO indicator
(e) TUNING AUTO/MANUAL indicator
(f) DIRECT ACCESS tuning indicator
(g) CUSTOM MEMORY indicator
(h) Indicates channel, STATION CALL number or sleep time.
(i) SEARCH indicator
(j) SCAN indicator
(k) MEMORY indicator
(l) TAPE 2 monitor indicator.



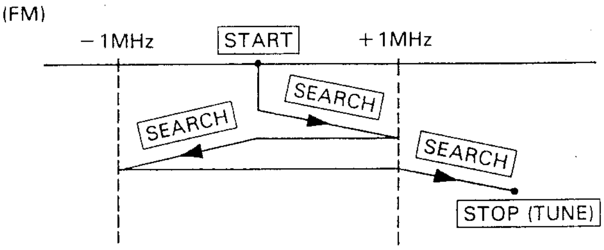
⑰ DIRECT ACCESS tuning button

When this button is pressed, the STATION CALL buttons function as ten-key number buttons for direct input of the desired reception frequency. Press again to cancel this mode.
If the input station falls outside of the receiver's tuning range, the display section will display a message:"UPPER" if the frequency is too high and "LOWER" if it is too low.

⑱ Remote sensor window
(SX-311R, SX-251R models only)

⑲ HITS button

- Works during FM reception.
- If the HITS button is pressed during input of numbers for DIRECT ACCESS tuning, the receiver sets the remaining digits which have not yet been input to "0", searches for the corresponding frequencies, and stops on the first station it finds.
- If the HITS button is pressed at the currently displayed station frequency, the receiver searches up and down the frequency band for the next station (the SEARCH indicator in the display section lights at this time) and stops at the first one it finds.



NOTE:

- *The system searches for stations within successive 1 MHz ranges for FM. During DIRECT ACCESS tuning, it searches up and down for a station until it reaches the edges of the band. If no receivable station is found within the band range, the receiver returns to the state it was in before the HITS button was pressed.*
- *If the upper (or lower) frequency limit of the receiver is encountered during HITS operation, the receiver stops searching in that direction but continues to search in the other.*

⑳ FM TUNING AUTO/MANU button

Works during FM reception.
Use this button to select either the AUTO mode or the MANUAL mode.
When the "AUTO" indicator is lit, the receiver is in the AUTO mode.

㉑ FM MODE AUTO/MONO selector button

Use to select the auto stereo mode or monaural mode when listening to FM broadcasts. The monaural mode has been selected when the FM MONO indicator is lighted.

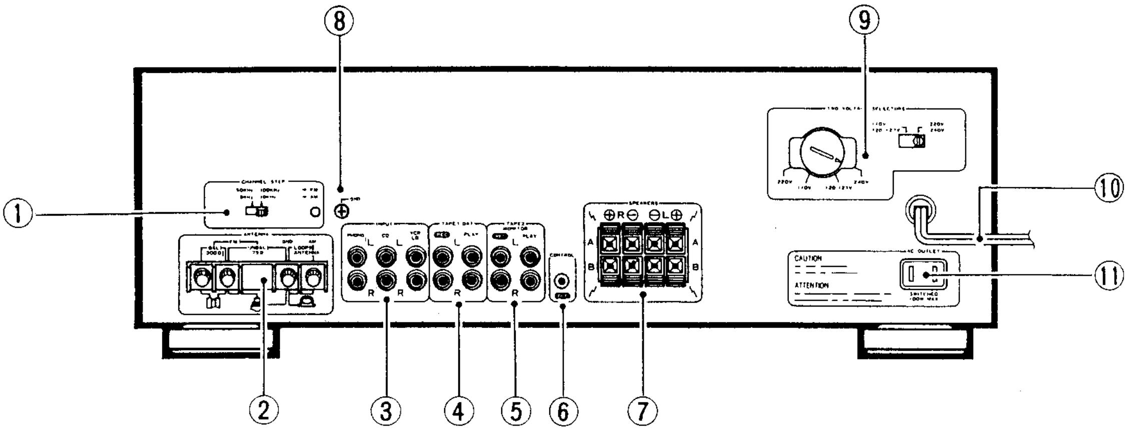
Auto stereo mode:
Normally leave in this mode for reception. When a stereo FM broadcast is received, it will be automatically reproduced in stereo sound.

Monaural mode:
When receiving distant stations or stations with weak broadcast signals, the input signal may be weak, thus resulting in increased noise during FM stereo broadcasts. In this event, setting the receiver to the monaural mode will reduce the noise. In this case, however, FM stereo broadcasts will be reproduced in monaural sound.

NOTE:
This button has no effect on reception of AM broadcasts.

X-311R/SX-301
X-251R/SX-201

- The illustration shows SX-311R multi-voltage model.



① CHANNEL STEP switch

② FM/AM ANTENNA terminals

Use these antenna terminals for receiving FM and AM broadcasts.

③ INPUT jacks

PHONO ········· Connect to the output cables from a turntable.
CD ······ Connect to the output jacks of a compact disc player.
VCR/LD ··· Connect to the output jacks of a video cassette recorder or LD player, etc.

④ TAPE 1/DAT jacks

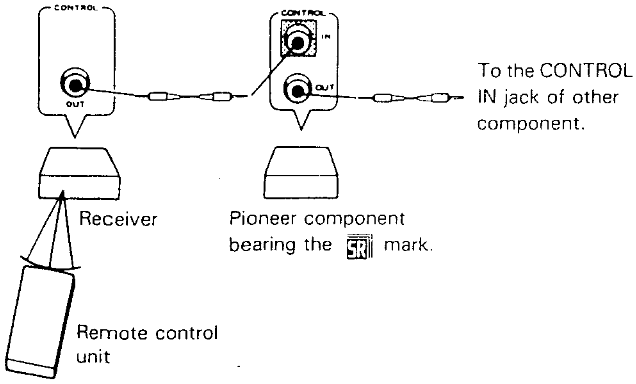
Connect these jacks to the cassette deck or digital audio tape deck.

⑤ TAPE 2 jacks

Connect these jacks to the cassette deck.

⑥ CONTROL OUT jacks
(SX-311R, SX-251R only)

Connect this jack to other Pioneer components bearing the SR mark when using the remote control of this unit to control the other components.



CONTROL
OUT
CONTROL
IN
OUT
To the CONTROL IN jack of other component.
Receiver
Pioneer component bearing the SR mark.
Remote control unit

⑦ SPEAKERS terminals

A: Connect to a first set speakers.
B: Connect to a second set of speakers.

NOTE:
No sound will be heard through the speakers when both A and B buttons are depressed if only one set of speakers has been connected to either A or B SPEAKERS terminals.

⑧ GND terminal

Connect to the ground lead of a turntable.
Use a screwdriver to connect with the ground terminal.

⑨ VOLTAGE SELECTORS
(SX-311R, SX-201 multi-voltage models only)

⑩ Power cord

Connect to AC wall socket.

⑪ AC OUTLET

AC OUTLET
[U.S. and Canadian models]
SWITCHED 100 W MAX (0.8 A MAX)

Power supplied through this outlet is turned on and off by the receiver's POWER switch. Electrical power consumption of the connected equipment should not exceed 100 W (0.8 A MAX).
The equipment should be disconnected by removing the mains plug from the wall socket when not in regular use, e.g. when on vacation.

[Multi-voltage model]
SWITCHED 100 W MAX

Power supplied through this outlet is turned on and off by the receiver's POWER switch. Electrical power consumption of the connected equipment should not exceed 100 W. The equipment should be disconnected by removing the mains plug from the wall socket when not in regular use, e.g. when on vacation.

CAUTION:
DO NOT CONNECT MONITOR OR TV SET.

NOTE:
Do not connect appliances with high power consumption such as heaters, irons, or television sets to the AC OUTLET, in order to avoid overheating or fire risk.
This can cause the receiver to malfunction.